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# Transportation Financing Opportunities for the State of California, MTI Report 06-01

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MTI Report 06-01

# Transportation Financing Opportunities for the State of California

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# TRANSPORTATION FINANCING OPPORTUNITIES FOR THE STATE OF CALIFORNIA

October 2006

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16.Abstract

Significant investments will be required to maintain, operate, upgrade, and expand California's transportation infrastructure if the state is to retain its economic position in the global economy and accommodate a projected near doubling of the current population by 2040. At the same time, available funding for transportation will decline significantly over the next 15 years if the current transportation finance system remains unchanged. This report analyzes a range of alternative sources of revenue, as well as different finance options. The research is based upon reviews of existing literature, interviews with key stakeholders, and two statewide phone surveys. The facility-based sources considered were toll roads and lanes, truck-only toll lanes, privatized rest areas, and public-private partnerships (PPPs). The taxes and fees evaluated were increasing fuel taxes by a fixed amount, indexing fuel taxes to inflation, mileage-based fees, vehicle registration fees, vehicle license fees, weight-mile taxes for trucks, a statewide sales tax, and state general fund revenues allocated either for current expenditures or to pay off general obligation bonds. Each of the revenue and finance options was evaluated according to five criteria: (1) revenue generation; (2) ease of implementation; (3) transportation system performance; (4) equity; and (5) political feasibility.

California needs a multiphased approach that considers near-, medium-, and long-term options. In the near term, state leaders could look to options with relatively strong political appeal that require no new administrative apparatus to implement. Of the tax and fee options evaluated, voters were most supportive of raising annual vehicle registration fees if the rate varied according to the vehicle's emissions or fuel economy. In both the near and medium term, public-private partnerships and tolled facilities have strong potential to help fund new infrastructure in certain locations. Likely voters were open to the idea of private companies building and operating toll facilities, particularly with state oversight. Also, despite general antitax sentiments, 43% of voters supported increasing the gas tax by 1¢ per year over ten years. General obligation bonds could be a source of funds in the near term, though they do not generate any new revenues for the state, and they reduce the level of funds the government will have to spend for other state programs. Long-term solutions that address fundamental changes in our transportation system and vehicle fleet will likely require significant shifts in attitudes and approaches.

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# EXECUTIVE SUMMARY

## INTRODUCTION

Significant investments will be required to maintain, operate, upgrade, and expand California's transportation infrastructure if the state is to retain its economic position in the global economy while accommodating a 20% increase in its population by 2040. At the same time, available funding for transportation will decline significantly over the next 15 years if the current transportation finance system remains unchanged. The real value of state and federal fuel taxes, which underpin the state's transportation finance system, could fall by more than a third between now and 2020 if the rates are not increased. This report assesses the most promising strategies for resolving California's dilemma of growing needs and shrinking revenues. In particular, the report identifies a set of revenue and finance options that could provide California with a stable and sufficient core stream of transportation revenues through 2020.

California, like most states, depends heavily on state and federal motor vehicle fuel excise taxes to fund its transportation system. These revenue sources performed well for much of the twentieth century, but have been losing their effectiveness in recent decades. Fuel taxes are assessed at a flat per-gallon rate, and because the legislature has not raised them in over ten years, these taxes are losing their value to inflation. In addition, over the past decades vehicles have become more fuel efficient, reducing the amount motorists pay per mile traveled. Current efforts to introduce new, more efficient engine technologies will erode fuel tax receipts further as some motorists use less or no petroleum-based fuel. Finally, should world events or other factors cause fuel prices to rise substantially higher, drivers may respond by driving less.

A projection of revenues from the major existing taxes and fees shows that the total amount of revenue from these sources will continue to decline over the next 15 years, under both low- and high-growth scenarios (Figure 1 and Figure 2). Even in an optimistic scenario, in which the state adds 8.2 million new residents and experiences only 2.5% annual inflation over the next 15 years, the state will have less available funding for transportation in 2020 than it does today, assuming no changes are made to increase revenues.

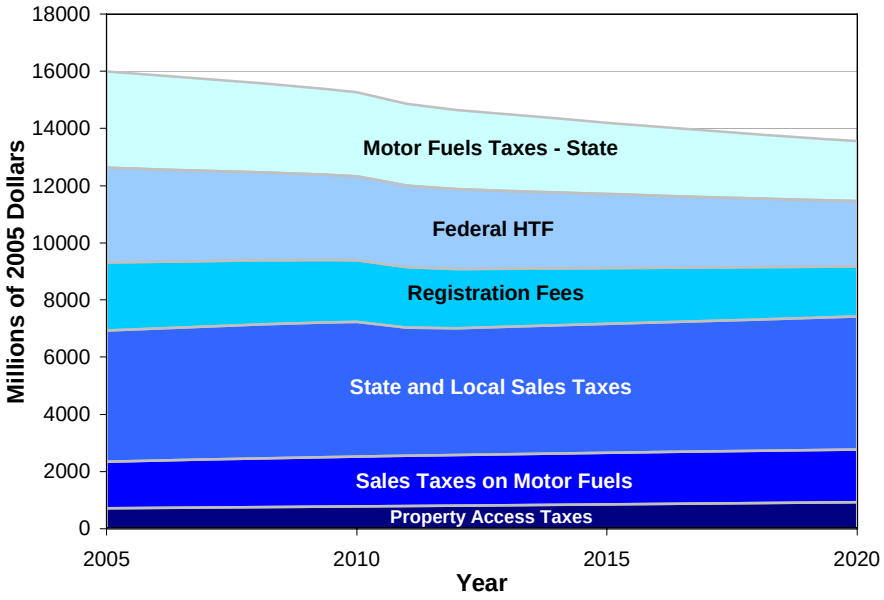


**Figure 1 Aggregate Projections for Major Revenue Sources, Low-Growth Scenario**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

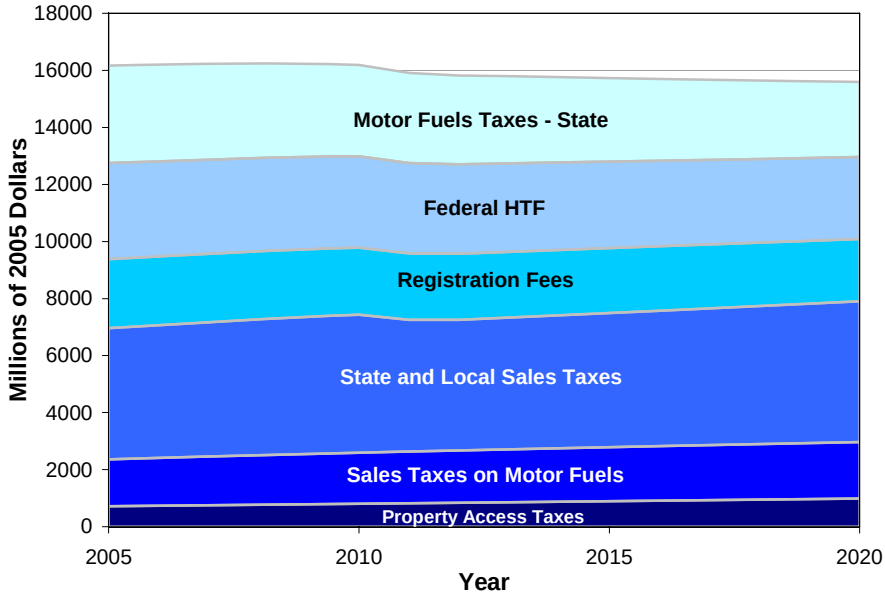


**Figure 2 Aggregate Projections for Major Revenue Sources, High-Growth Scenario**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

To return California's transportation finance system to a stable footing, the state's leaders must choose among a broad array of potential transportation revenue sources, as well as finance options. The state could raise or modify some of its existing taxes and fees, for example, by linking state fuel taxes to inflation or using tolls more widely to finance new facilities. California might also consider the dozens of other options some states have used or considered. To name a few, these include vehicle mileage taxes, rental car taxes, real estate transfer taxes, local income taxes, local benefit assessment districts, and selling highway naming rights (see Appendix B for a longer list of options). As for finance options, one is for the state to borrow money to spend immediately, though the bonds must ultimately be repaid by future generations. Another option is to allow the private sector to invest in public infrastructure in exchange for the right to collect tolls or other charges, a strategy that reduces the need for public investment.

Wise and careful choices made now will bring long-term benefits to California. First, history shows that California, like most states, has changed its transportation finance system only rarely. Decisions made today are likely to remain in place for decades to come. In addition, different revenue and finance options will impact the state's residents, environment, and economy in very different ways—some options will help the state to further policy goals such as environmental protections and social equity, while others will undermine them.

## METHODOLOGY

This study was conducted in three phases. The first phase involved review of published literature, government reports, and newspaper databases to identify a large set of potential revenue and finance measures for analysis. In the second phase, five evaluation criteria were applied to each option in order to narrow these to a set of more promising options for further review. In the third phase, a full assessment of the most viable set of revenue options was developed. The following research methods were used throughout the study:

- Review of literature on state-level approaches to raising transportation revenue
- Analysis and forecasting of California revenue trends
- Opinion polls of California residents
- Analysis of California legislative activity
- California stakeholder interviews
- Analysis of state fuel tax rates and trends in the U.S.
- Analysis of recent statewide ballot measures in the U.S.

The revenue options evaluated in more depth include facility-based sources, where tolls and other revenue generated from the use of the facility pay for its construction and maintenance, as well as the more traditional government taxes and fees. The four facility-based sources considered were toll roads and lanes, truck-only toll lanes, privatized rest areas, and public-private partnerships (PPPs). The taxes and fees evaluated were increasing fuel taxes by a fixed amount, indexing fuel taxes to inflation, mileage-based fees, vehicle registration fees, vehicle license fees, weight-mile taxes for trucks, a statewide sales tax, and state general-fund revenues allocated either for current expenditures or to pay off bonds that raised money for transportation expenditures.

## EVALUATION OF OPTIONS

Each of the revenue and finance options was evaluated according to five criteria:

1. Revenue generation
2. Ease of implementation
3. Transportation system performance
4. Equity
5. Political feasibility

By assessing the options according to these criteria, a well-rounded picture emerges of the strengths and weaknesses of each. No option fares consistently high across all criteria; policymakers must balance the advantages against the disadvantages of a revenue measure in order to select the one that best fits with California's goals and needs.

The findings of this study's review of transportation finance options are summarized in Table 1 and Table 2. The following section describes the highlights of the analysis in more detail.

## Table 1 Key Advantages and Disadvantages of Tax and Fee Options

| Option | Advantages | Disadvantages |
|---|---|---|
| Increase fuel tax by 10¢ over ten years | • Very high revenue generation<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received)<br>• Easy to implement | • Politically unpopular, though smaller increase may be feasible |
| Index the fuel tax to inflation rate | • Very high revenue generation<br>• Stabilizes revenue stream relative to inflation<br>• Supports state's environmental goals by encouraging purchase of fuel efficient vehicles<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Very unpopular with voters |
| Mileage-based fee replaces fuel tax | • Addresses long term question of fuel tax viability<br>• Could improve system performance if fees vary by vehicle type, time of day, location of travel<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Difficult to implement<br>• Could reduce incentive to purchase fuel efficient vehicles if fees did not vary by vehicle type<br>• Strong opposition from many interests |
| Increase registration fee by $31 | • High revenue generation<br>• Stable, predictable source<br>• Easy to implement | • Low voter support |
| Increase registration fee, varying by mileage or emissions | • High revenue generation<br>• Supports state's environmental goals<br>• Good voter support, relative to other taxes or fees | |
| Raise VLF by 0.35% | • Very high revenue generation<br>• Revenues increase with inflation | • Highly charged political issue |
| Weight-mile fees for trucks | • Vehicles pay in proportion to costs imposed on system | • Strong political opposition likely<br>• Would require new system |
| Statewide sales tax | • Very high revenue generation<br>• More popular with voters than other taxes | • Regressive<br>• Taxpayers do not pay in proportion to how much they use the transportation system or the costs they impose on the system |
| General obligation bonds | • Historically popular with voters | • Does not generate new revenue<br>• Commits future general revenue<br>• Taxpayers do not pay in proportion to how much they use the transportation system or the costs they impose on the system |
| Annual appropriations of general fund revenues | • Progressive, if income tax revenues used | • Unpredictable revenues<br>• Taxpayers do not pay in proportion to how much they use the transportation system or the costs they impose on the system |

## Table 2 Key Advantages and Disadvantages of Facility-Based Revenue and Finance Options

| Facility Option | Key Advantages | Key Disadvantages |
|---|---|---|
| Fully Tolled Roads | • Generate revenue to help pay part or all of the facility's construction and operation costs<br>• Can provide a congestion-free trip, if variably priced<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Unpredictable revenues<br>• Regressive<br>• Low voter support |
| Express Lanes | • Generate revenue to help pay part or all of the facility's construction and operation costs<br>• Can reduce congestion on both the tolled and free lanes, especially if variably priced<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Generate less revenue than fully tolled roads |
| HOT Lanes | • Encourage transit and carpooling<br>• Provide a congestion-free alternative<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received)<br>• Good voter support, relative to other taxes and fees | • Generate the least revenue of the toll facilities discussed<br>• Enforcement can be difficult |
| Truck-Only Toll Lanes | • Reduce accidents between heavy trucks and light-duty vehicles<br>• Increase speed and reliability for deliveries<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received)<br>• Very good voter support, relative to other taxes and fees | • Likely opposition from trucking industry, unless the lanes are voluntary |
| PPP Toll Facilities | • May generate capital funds the state cannot otherwise access<br>• Increased innovation and flexibility in design, construction, and management of the facility (can reduce costs and improve service quality) | • May increase construction costs if private sector pays higher interest rates than the public sector<br>• Reduced public sector freedom to change rates and usage policies |
| Privatized Rest Areas | • Provide drivers with new amenities<br>• Improve safety by adding truck rest areas<br>• Very popular with the public | • Very low revenue generation<br>• Strong opposition from business owners and local governments in the area likely |

## REVENUE GENERATION

There are many technically promising and politically feasible options to develop facility-based revenue sources in California, from truck-only toll roads in corridors with heavy freight traffic, to high-occupancy toll (HOT) lane or express lane systems (freeways with adjacent free and tolled lanes) in congested corridors where some drivers will be willing to pay a toll in exchange for a faster trip. Fully tolled highways are likely to be less popular, but the fiscal viability of several new toll roads in Orange County shows that even fully tolled roads have a future in California. Finally, privatizing rest areas has promise for improving the quality of services available to long-distance travelers.

Toll facilities can complement the statewide taxes and fees that generate a core revenue stream for transportation by providing the funding to build some high-profile projects in some heavily trafficked regions of California, where sufficient travel demand will allow the facilities to pay for themselves. This can be achieved through the creation of new public authorities, or through public-private partnerships (PPPs), in which the firms build and/or operate transportation facilities over a fixed period in exchange for the right to collect user payments. PPPs are often able to secure fixed, long-term schedules for increasing toll rates, which allows them to make larger up-front investments in infrastructure than might otherwise be possible. In terms of potential revenue generation, facility-based finance tools are by themselves unlikely to generate enough of a surplus that they can fill the gap left by falling fuel tax revenues.

Of the state tax and fee options examined in this report, three have the greatest long-term potential to generate revenue: increasing the vehicle license fee from 0.65% to 1.0% of vehicle value, a new statewide 1/4¢ sales tax, and indexing the fuel tax rate to inflation (see Table 3). These sources will retain their revenue production over time because they do not lose value due to inflation. A fourth option, converting the existing state motor fuel tax into a 1¢ mileage fee, will provide an additional revenue stream that will grow over time, but not enough to counteract the effects of inflation. Traditional revenue options (including fixed or incremental increases in the fuel tax or motor vehicle registration fees) can generate substantial revenues in the near term, but will decline in real terms, due to inflation.

**Table 3 Comparison of Revenue Potential in 2020 of New or Increased Statewide Taxes and Fees**

| Tax or Fee Change | Estimated Revenues in 2020 | | |
|---|---|---|---|
| | Millions of 2005 Dollars | As Percent of State Fuel Tax Revenues at 2006 Rate | Annual Revenue Growth Rate in 2020 |
| *State Fuel Tax at 2006 Rate* | *$2,093–$2,627* | – | *–2.2% to –3.5%* |
| Add 1¢/Gallon Fuel Tax Each Year for Ten Years | $1,163–$1,459 | 56% | –2.2% to –3.5% |
| Additional 6¢/Gallon Fuel Tax | $698–$876 | 33% | –2.2% to –3.5% |
| Index Existing Fuel Tax for Inflation | $1,442–$1,009 | 38%–69% | 5.9% to 6.6% |
| Replace 18¢/Gallon Fuel Tax with 1¢/Mile Mileage Fee | $401–$503 | 19% | 7.2% to 8.6% |
| Additional $31/Year Personal Vehicle Registration Fee (flat rate or varying by vehicle characteristics) | $462–$580 | 22% | –1.2% to –2.6% |
| Additional 0.25% Sales Tax | $1,465–$1,567 | 60%–70% | 0.75% to 1.1% |
| Additional 0.35% Vehicle License Fee | $1,841–$1,968 | 75%–88% | 2.8% to 3.2% |
| *Sources*: Authors' projections, based on data discussed in Appendix C. | | | |
| *Note*: Range of revenue options based upon low and high growth scenarios with varying population growth and inflation assumptions. See Appendix C for details. | | | |

## EASE OF IMPLEMENTATION

Except for the mileage fees and truck weight-mile fees, the tax and fee options would all be easy to implement because they merely modify existing administrative processes, rather than require new processes. Developing new toll facilities can have significant administrative costs, especially if new public or private organizations must be established to administer them. Most tolled roads and lanes would use electronic toll collection (ETC); some facilities would also need toll booths. Both systems are currently in use on many facilities in California and would not be difficult to implement on new facilities. The costs to collect the tolls and enforce the tolled facilities would reduce revenue. The use of PPPs involves additional public costs, as agencies would require new expertise to negotiate, implement, and manage the agreements.

## TRANSPORTATION SYSTEM PERFORMANCE

Tolled facilities offer opportunities to improve transportation system performance by making it possible to implement variable pricing as a traffic management technique. Variably priced tolls can permanently eliminate recurring congestion on a facility. Even without variable pricing, flat tolls will somewhat reduce traffic on those lanes, compared to

what would occur if the lanes were free. At the same time, new toll roads have the potential to increase overall levels of traffic and thus increase congestion elsewhere on the network. Removing truck traffic from mixed-flow lanes on highways through truck-only toll lanes could generate several important improvements in system performance that would benefit the trucking industry and other highway travelers alike. Using PPPs to implement tolled facilities could have both positive and negative impacts on the performance of the system, depending upon how the agreements are written.

Most of the different tax and fee revenue options examined in this report would not directly affect the performance of the transportation system, at least noticeably. One exception is mileage fees. Mileage fees that vary by time of day, level of congestion, or axle weight have been shown to be particularly effective in reducing traffic delays, air pollution, and roadway damage, respectively. Weight-distance fees for trucks can help rationalize the movement of freight by embedding the costs of pavement damage in the cost of moving goods.

## EQUITY

This study examined three basic concepts of equity: proportionality to user benefits, proportionality to user impacts, and ability to pay. From the perspective of user benefits, all of the vehicle, fuel, and mileage-based fees, tolls, and taxes are at least somewhat equitable, in that users pay in some proportion to their use of the system and to the costs they impose on the system. To the extent that these fees can be structured to vary according to the levels of congestion, or the environmental impacts caused by individual vehicles, these fees can be said to be equitable with regard to the costs that users impose on the system.

Nearly all of the fees and taxes examined in this study tend to be regressive with respect to income. Sales taxes, motor fuel taxes, vehicle registration fees, and vehicle license fees are all highly regressive with respect to income. Tolls may or may not be regressive, depending on the user profile of an individual facility. Property taxes are somewhat less regressive. General obligation bonds and annual appropriations, on the other hand, are progressive to the extent that they are paid from income tax revenues. Overall, the sales tax is perhaps the least equitable of these tax and fee options, because it is regressive, yet it is also paid by all residents regardless of their use of the transportation system.

## POLITICAL FEASIBILITY

New taxes and fees are generally not popular politically. The survey of California residents confirmed this (see Table 4). However, two measures showed promise of potentially gaining majority support: increasing the fuel tax by 10¢ over ten years (43% of likely voters supported, 54% opposed), and increasing registration fees and varying them by fuel economy or emissions (45% supported and 51% opposed). Given the recent success of a 9.5¢ per-gallon fuel tax increase in Washington, these options are worth exploring in California. While increasing the vehicle license fee (VLF) was supported by 42% of likely voters (with 53% opposed), the high-profile debates over the future of this tax during the 2003 gubernatorial recall election make it a less politically attractive option in the near-term than other taxes or fees. Finally, less than one-third of likely voters supported the use of general obligation bonds when they were told that paying off the bonds over 30 years would use money that otherwise might be spent for other state programs and services.

Tolled roads do not have a strong presence in California, which increases the challenge of raising support for them. A survey conducted for this report showed that converting underused carpools lanes to HOT lanes had clear majority support. Fully tolled roads have less clear political support among both the public and stakeholders. Less than half (44%) of the likely voters surveyed supported building new, fully tolled roads. However, support for tolled facilities may be different when people are asked about a particular project in a corridor they often travel. Truck-only toll (TOT) lanes were popular with likely voters, but face opposition from the trucking industry.

**Table 4 Comparison of Likely Voter Support for Increased Revenue Options**

| Revenue Option | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Privatized rest areas | 71 | 24 | 5 |
| Truck-only toll lanes that trucks must use | 62 | 33 | 5 |
| Converting carpool lanes to HOT lanes | 56 | 41 | 3 |
| Express toll lanes alongside existing highways | 47 | 48 | 6 |
| Additional $31/year personal vehicle registration fee, varying by fuel economy or emissions | 45 | 51 | 4 |
| New toll roads | 44 | 51 | 5 |
| Add 1¢/gallon fuel tax each year for ten years | 43 | 54 | 3 |
| Additional 0.35% vehicle license fee | 42 | 53 | 5 |
| Additional 1/2¢ sales tax [a] | 41 | 57 | 3 |
| Tolls on new highway lanes | 36 | 59 | 5 |
| Additional $31/year personal vehicle registration fee | 34 | 63 | 4 |
| General obligation bonds | 30 | 56 | 14 [a] |
| Index existing fuel tax for inflation | 28 | 66 | 6 |
| Replace 18¢/gallon fuel tax with 1¢/mile mileage fee | 23 | 72 | 5 |

*Source*: See Appendix A.

a. Response includes "maybe/depends" and "don't know." "Maybe/depends" was an option as a response for the general obligation bond question but not other questions.

## CONCLUSIONS AND RECOMMENDATIONS

Transportation agencies in California have long relied on a package of different state, federal, and local revenue sources to fund the surface transportation system. Within this broad picture, state funds have played two important functions which should continue.

First, state revenues are a cornerstone of available revenues, especially for the state highway system. Unless the state grants local governments much greater flexibility in their taxing powers, locals are unlikely to be able to make up the gap created by shrinking state funds. In addition, rural counties have large road systems but small populations and tax bases, a situation that makes it especially hard for them to raise money independently. Thus, there remains an important role for the state to provide a substantial portion of the money needed to maintain, operate, and expand California's transportation infrastructure.

Second, the state has historically played a key role in setting guidelines and priorities for how funds are spent, helping to manage the transportation network so that it functions effectively as a statewide system. The state has a continuing interest in ensuring that scarce transportation dollars are spent in ways that support its key policy priorities. In the

coming years, California will face a number of policy challenges that are truly statewide in scope: accommodating a surging population, meeting the needs of rural areas that are struggling economically, protecting critical habitats and valuable farmland for future generations, improving long-distance intercity travel, ensuring that residents enjoy healthful air quality, and confronting the challenge of global climate change. One of the most effective ways for the state to ensure that its policy goals are addressed in transportation decision making is to maintain its historical commitment to funding its share of the transportation system.

To address current and future funding shortfalls, so that the state can continue to fulfill these two functions, California needs a multiphased approach that considers near-, medium-, and long-term options. In the long term, fuel taxes will lose much of their power as high efficiency or alternative-fuel vehicles become more common. And even in the short term, the state barely has sufficient revenues to maintain and operate the current system, leaving little money available for improvements. In crafting a comprehensive strategy for each time frame, a sensible approach would be to pursue a variety of strategies simultaneously, given the substantial amount of funds needed and the political reluctance to pursue large increases in any single revenue source.

In the near term, state leaders could look to options with relatively strong political appeal that require no new administrative apparatus to implement, and that fare well under the equity and transportation system efficiency criteria. Of the tax and fee options evaluated, voters were most supportive of raising annual vehicle registration fees if the rate varied according to the vehicle's emissions or fuel economy. Also, despite general antitax sentiments, 43% of voters supported increasing the gas tax by 1¢-per-year over ten years (54% would oppose this). General obligation bonds could be a source of funds in the near term, though they do not generate net revenues for the state, and they reduce the level of funds available for transportation or other state programs during the years the bonds are being repaid.

In both the near and medium term, PPPs and tolled facilities have strong potential to help fund new infrastructure in certain locations. Tolls can be used to build, improve, and maintain some new facilities, although toll facilities by themselves are not a long-term solution to the state's transportation needs. As for PPPs, these reduce the need for government investment (and thus revenues) by leveraging private capital to help finance new infrastructure. Likely voters in the study's second survey were open to the idea of private companies building and operating toll facilities, particularly with state oversight. Also, privatizing rest stops has potential to finance improvements to the quality of the

travel experience in the state's long-distance highway corridors. Voters support the concept strongly, though this option would generate very little extra revenue for the state and faces some administrative and regulatory hurdles.

Several of the tax and fee options may be viable in the medium or long term. For example, despite the recent, highly publicized rollback of the VLF in 2003, 42% of voters surveyed supported increasing the annual VLF from 0.65% to 1.0% of a vehicle's value (53% opposed this). As economic conditions, transportation technologies, and political realities change with time, the outlook for measures that look unacceptable today may change as well. Long-term solutions that address fundamental changes in the transportation system and vehicle fleet will likely require significant shifts in attitudes and approaches. One alternative attracting growing interest among transportation experts is replacing fuel taxes with a mileage-based fee. An advantage of a mileage-fee approach is that it charges road users in rough proportion to the benefits they receive from driving and the cost of providing them with road infrastructure, while also capturing revenue from the growing number of alternative fuel vehicles that pay little or no fuel taxes. For these reasons, mileage fees are worth exploring further, despite the low levels of public support at the moment and concerns regarding the implementation of such a system. Three pilot projects are currently underway in the U.S. to test the technical feasibility of mileage-based taxation systems.

Finally, this research suggests three ways to gain popular support for new transportation revenues by designing approaches that mesh with the interests of voters:

- Voters are interested in variable fees and taxes that are higher for vehicles that have more negative environmental and energy consumption impacts. A full 64% of voters indicated support for varying registration fees based on a vehicle's pollution level, while only 33% opposed this.
- Voters are more likely to support tax or fee increases that designate the new revenues to programs that voters support. Although linking revenues to specific projects limits the state's ability to react flexibly as new needs arise, designating revenues for program categories may satisfy voters without limiting decision makers' ability to plan and spend revenues according to need. The survey showed that reducing traffic congestion on freeways and highways and maintaining local streets were a high priority for more voters than was expanding freeways. Transit was also a high priority for many voters when asked whether the government should prioritize transit or streets and highways.

- Regional solutions may be a feasible complement to state revenue sources. In a few cases, the survey found that a majority of voters in a region supported a new tax or fee, even though a minority supported it statewide. Because many transportation problems and solutions are local or regional in scope, increasing the options for raising funds at a local or regional level is a sensible option to fill some funding gaps.

State leaders face a daunting task to secure sufficient revenues to support California's transportation infrastructure over the next decades. They will need to sift through dozens of revenue and financing options to identify the ones that have strong revenue potential, promote state objectives such as reducing congestion and improving environmental quality, and also are acceptable to political stakeholders and the public. Despite the challenges, there are several promising solutions. This study identifies a set of options that can meet those criteria and allow California to maintain a high-quality transportation infrastructure that will support its citizens and businesses into the twenty-first century.

# INTRODUCTION

California's citizens and leaders recognize that the time has come for the state to make substantial investments to upgrade the infrastructure supporting its 37 million residents and $1.5 trillion economy, the sixth largest in the world (California Legislative Analyst's Office, 2004). As explained in a January 2006 briefing from Governor Schwarzenegger's office:

> In the 1950s and 1960s, Californians made a phenomenal investment in the state's highways, ports, water supply systems, schools, and universities. The leaders of the time had the foresight and commitment to build the infrastructure that is now the foundation of the sixth largest economy in the world. … Now it is this generation's turn to build a prosperous future for our children and grandchildren (State of California, 2006, 1).

The state's transportation system is a critical infrastructure that will require significant investments for maintenance, operations, and upgrades in order to support California's business development and accommodate a projected near doubling of the current population by 2040. At the same time, as described in two previous studies (Brown et al., 1999; Adams et al., 2001), available funding for transportation will decline significantly over the coming years if the current transportation finance system remains unchanged. The real value of state and federal fuel taxes, which underpin the state transportation finance system, could fall by more than a third between now and 2020 if the rates are not increased. This report assesses the most promising strategies for resolving California's dilemma of growing needs and shrinking revenues. In particular, the report identifies a set of revenue and finance options that could provide California with a stable and sufficient core stream of transportation revenues through 2020.

To return California's transportation finance system to a stable footing, the state's leaders must choose among a broad array of potential revenue sources, as well as different finance options. The state could raise or modify some of its existing taxes and fees, for example by linking state fuel taxes to inflation or using tolls more widely to finance new facilities. California might also consider the dozens of other options some states have used or considered. To name a few, these include vehicle mileage taxes, rental car taxes, real estate transfer taxes, local income taxes, local benefit assessment districts, and selling highway naming rights (see Appendix B for a longer list of options). As for finance options, one is for the state to borrow money to spend immediately, though the bonds must ultimately be

repaid by future generations. Another option is to allow the private sector to invest in public infrastructure in exchange for the right to collect tolls or other charges, a strategy that reduces the need for public investment.

Wise and careful choices made now will bring long-term benefits to California. First, history shows that California, like most states, has changed its transportation finance system only rarely. Decisions made today are likely to remain in place for decades to come. In addition, different revenue and finance options will impact the states' residents, environment, and economy in very different ways—some options will help the state to further policy goals such as environmental protections and social equity, while others will undermine them.

To make wise choices, decision makers must consider a wide range of criteria when choosing among options. One is each option's potential to raise a substantial and stable stream of money over time to invest in the transportation system, and another is the likelihood of gaining political support to adopt the measure. Equally important are factors such as the measure's equity implications, the ease with which it can be administered, potential to reduce traffic congestion, and potential to encourage environmentally friendly transportation choices.

## FUTURE TRANSPORTATION REVENUES: TOUGH CHOICES AHEAD

California has long been faced with revenue shortfalls that have led to the slow deterioration of its transportation system. The California Transportation Commission estimated in a 1999 report that for the ten-year time period from 2000 to 2010 there will be over $117 billion in unmet needs for California's transportation system (California Transportation Commission, 1999), and others have echoed this estimate (Bustamante, 2000).

The public also wants the government to improve the transportation system. Various opinion polls over the last decade have found that people rate the quality of the transportation system to be a problem (among the most recent are Baldassare, 2005; Bay Area Council, 2006). In a poll conducted for this report, 56% of respondents considered the quality of the transportation system as either a big problem or somewhat of a problem for them personally; a slightly larger majority of 59% thought that state and local governments should spend more on transportation (see Appendix A for additional survey results).

If state leaders do not make changes, funding for transportation will decline significantly over the next 20 years. California, like most states, depends heavily on state and federal motor fuel excise taxes (fuel taxes) to fund its transportation system. These revenue sources performed well for much of the twentieth century, but have been losing their effectiveness in recent decades. Fuel taxes are assessed at a flat per-gallon rate, and because the legislature has not raised them recently, these taxes are losing their value to inflation. In addition, over the past decades vehicles have become more fuel efficient, reducing the amount motorists pay per mile traveled. Current efforts to introduce new, more efficient engine technologies will erode fuel tax receipts further as some motorists use less or no petroleum-based fuel. Finally, should world events or other factors cause fuel prices to rise substantially higher, drivers may respond by driving less.

Over the past two decades, regional and county-level governments have developed strategies to raise new streams of transportation revenue that help compensate for the loss in state and federal fuel tax transportation revenues. County-level transportation sales taxes are now one of the largest sources of revenue for new highway construction projects and the third largest source of transit operating revenues (California State Controller's Office, 2006b, xi). In recent years, several counties have tried to pass local vehicle registration surcharges and have investigated the possibility of regional gas taxes or new tolled highways.

These local efforts have supplemented state and federal transportation monies and helped to alleviate demands for statewide gasoline tax increases over the past decade. However, local governments may have reached the limits of their own revenue potential. Now, if the state wishes to ensure a resilient supply for transportation funds, the legislature needs to restore the state's contribution to transportation investment or else give local governments new tools for generating revenue on their own. This report was written to help the state's leaders and residents assess their options for raising new transportation revenues and to select those options that will more effectively and fairly generate a core stream of monies to support the transportation needs of residents and businesses.

## CHOOSING THE BEST OPTIONS: FIVE EVALUATION CRITERIA

California faces a bewildering array of potential transportation revenue sources. The state could raise or modify some of its existing taxes and fees, for example by linking state fuel taxes to inflation or using tolls more widely to finance new facilities. California might also consider the dozens of other options some states have used or considered. To name a few,

these include vehicle mileage taxes, rental car taxes, real estate transfer taxes, local income taxes, local benefit assessment districts, and selling highway naming rights (see Appendix B for a longer list of options).

To compare the many alternatives systematically for this report, each was assessed using five criteria: revenue potential, administrative and technical feasibility, transportation system performance, equity, and political feasibility. Taken collectively, these criteria test whether an option can feasibly succeed in raising substantial revenues, as well as how it will impact the state's travelers, economy, and environment.

- **Revenue generation:** The first criterion, revenue generation, assesses whether the option will generate sufficient revenue to have a meaningful impact on statewide needs. In addition to assessing the near-term revenues generated, it is also important to look at the potential for the revenue option to provide stable and predictable revenues over the long term. Effective transportation planning and capital asset management require knowing five, ten, and even twenty years into the future what resources will be available to maintain existing infrastructure and services, as well as to fund major capital projects constructed over many years.
- **Ease of implementation:** This second criterion assesses whether or not the state can collect the revenues easily. One key consideration is whether the state already has in place the administrative structure to do so, as setting up new structures can be costly, time-consuming, politically unpopular, and subject to other unforeseen problems. If new technologies are required, such as for some new revenue options that have not yet been implemented, there may be uncertainty about how well the new systems will perform. Another factor to consider is the cost of collecting the tax or fee. Some revenue options cost very little to collect (perhaps less than 1% of revenues), while others, such as tolls, can consume up to 20% of revenues in collection costs. Fraud and evasion of payment are other concerns for some options, especially those that are relatively untested, like mileage fees. Finally, this criterion also assesses whether state or federal laws and regulations would need to be changed to make the option legal.
- **Transportation system performance:** One of the most important—yet often overlooked—criteria is transportation system performance. All taxes and fees influence economic behavior. To the extent that they affect individuals' and businesses' decisions and behavior within the transportation system, they can influence the overall efficiency and performance of the system. For example, fuel taxes raise the price of gasoline, providing some incentive for people to purchase more fuel-efficient vehicles or drive less, thus potentially reducing fossil fuel consumption and greenhouse gas emissions. If

some roads are tolled and others are not, drivers may shift to the nontolled routes, increasing congestion on the free roads and decreasing it on the tolled ones. Because the behavioral shifts triggered by transportation revenue mechanisms can have substantial effects on traffic flow and the environment, it is critical to try to predict these shifts and their consequences.

- **Equity:** Fairness, or equity, is a paramount policy concern. Equity is complex to measure, and its meaning varies greatly from person to person. This study relies on three of the many definitions used in transportation policy analysis: proportionality to user benefits, proportionality to user impacts, and ability to pay. The benefit definition states that a revenue measure is equitable if users of the transportation system pay in proportion to the benefits they receive. According to this definition, a person who does not directly use the highway or transit system should not pay taxes to support it. According to the cost definition, equitable revenue measures are ones that charge users according to the costs they impose on the transportation system. For example, the cost definition suggests that heavy trucks should pay higher fees than passenger cars for using the roadways, because heavier vehicles create more pavement damage than lighter vehicles. Finally, many policy makers are concerned with ensuring that government taxes people according to their ability to pay, and that it does not disproportionately burden the poor. The common terms used to describe these methods are *regressive* and *progressive* taxes. The income tax is a classic progressive tax, as higher income people pay a larger proportion of their income. Tolls, on the other hand, are regressive, since everyone pays the same amount regardless of income, and the toll will represent a larger share of a poorer person's income.
- **Political feasibility:** Even a revenue option that performs well under the first four criteria is unlikely to be implemented if the public and elected officials do not support it. Many factors influence political feasibility. Revenue options that have been used in the past have greater likelihood of gaining support—both voters and elected officials tend to be more supportive of modifying existing measures than adopting entirely new ones. In addition, politically feasible measures tend to have at least a few strong champions, and relatively diffuse (or poorly organized) opponents. Finally, California's history shows that transportation revenue measures usually succeed only if they have support from both the northern and southern regions of the state.

By assessing the options according to these criteria, a well-rounded picture emerges of the strengths and weaknesses of each. No option fares consistently high across all criteria;

policy makers must balance the advantages against the disadvantages of a revenue measure in order to select the one that best fits with California's goals and needs.

## STUDY METHODS

This study was conducted in three phases. The first phase entailed review of published literature, government reports, and newspaper databases to identify a large set of potential revenue and finance measures for analysis. In the second phase, the five evaluation criteria were applied to each option in order to narrow these to a set of more promising options for further review. In the third phase, a full assessment of the final set of revenue options was developed.

The following research methods were used throughout the second and third phases:

- **Review of literature on state-level approaches to transportation finance:** There already is extensive literature on transportation finance in California (Brown et al., 1999; Dill et al., 1999; Adams et al., 2001; Taylor et al., 2001; Crabbe et al., 2002). The literature review conducted for this study built on the previous writings by identifying additional reports and articles by government agencies, nonprofits, and academic researchers across the United States that assess different transportation revenue and finance options.
- **Analysis and forecasting of California revenue trends:** For each of the major revenue measures examined in this study, the research team developed forecasts for future growth under several different economic scenarios, taking into account past growth trends and variability (see Appendix C for details).
- **Opinion polls of California residents:** The Survey and Policy Research Institute at San José State University conducted two public opinion polls of California residents to assess their preferences regarding different revenue and finance options. The first, a survey of over 2,700 residents, focused on people's views about the need to raise transportation revenues and their preferences for different options to raise transportation revenues through new or augmented statewide taxes and fees. The second poll asked over 800 residents their views on raising revenues by charging user fees on specific facilities such as tolled highways, and on incorporating public-private partnerships into these plans (see Appendix A for a discussion of the results and Appendix J and Appendix K for the survey instruments).

- **Analysis of California legislative activity:** The research team identified and examined all 128 bills introduced into the California legislature from 1999 to 2005 that aimed to increase or decrease transportation revenues. From these, the team identified trends and indicators of success (see Appendix D for details).
- **California stakeholder interviews:** The research team interviewed seventeen experts involved in transportation finance issues in California. The interviewees were chosen to reflect a diversity of perspectives. Respondents were asked their views on the value of pursuing a wide range of different revenue options. These interviews provided critical feedback during the design stage of the survey instruments for the public opinion polls. In addition, interviewees were asked how they thought the public felt about several broader thematic questions related to choosing transportation revenue options. These interviews helped identify the selection of options to analyze in this report, the content of the public opinion polls, and the final evaluation of options (see Appendix E for details).
- **Analysis of state fuel tax rates and trends in the U.S.:** The research team collected state gas tax rate information for all 50 states and the District of Columbia, for the period 1970 to 2005. The data set was analyzed for general trends in rate changes in the context of inflationary impacts, increasing vehicles miles traveled, and increased vehicle fuel efficiency with respect to gas tax revenues (see Appendix G for details).
- **Analysis of recent statewide ballot measures in the U.S.:** The team identifies thirty transportation-related ballot measures on state ballots across the country between the years 2001 and 2005. A review of the successes and failures of these recent ballot measures provided insight into the initiative process (see Appendix H for details).

## REPORT OVERVIEW

The next sections of the report discuss the results of the analysis. The second section explains the current sources of transportation revenue in California and projects likely revenue yields through year 2020 for the major sources. The third and fourth sections analyze different revenue and finance options using the evaluation criteria described above. The third section evaluates two types of facility-based revenue sources, tolls and commercialized rest areas, as well as the potential to incorporate private financing in transportation infrastructure projects. The fourth section assesses various options for statewide taxes and fees: fuel taxes, mileage fees, vehicle registration fees, vehicle license

fees, weight-mile fees for heavy vehicles, a statewide sales tax, and money from the state's general revenue fund. The concluding section presents a set of findings to guide decision makers as they choose from among the many options.

# THE CURRENT SYSTEM OF TRANSPORTATION FUNDING IN CALIFORNIA

## INTRODUCTION

California, like most states, generates revenue for transportation from a complex system of taxes and fees collected by federal, state, and local governments. This section presents an overview of all the primary transportation revenue sources used in the state.

For fiscal year 2003–04, transportation revenues in California totaled nearly $21.7 billion. Table 5 shows the major transportation revenue sources in California grouped into three categories based on how closely payment is linked to use of the transportation system:[1]

- **User charges:** User charges are those taxes and fees that are most closely linked to the use of the transportation system. Generally, user charges have independent tax rates for the purpose of generating transportation revenues. User charges include fuel taxes, tolls and transit fares, severance taxes, and other state and federal fees that are assessed only from users of the transportation system.
- **Property access charges:** Property access charges are similar to user charges in that the payments are linked to the benefits landowners receive from the transportation system. However, property access charges differ from user charges in that they represent annual or one-time fees that are collected from developers or property owners in exchange for providing infrastructure or transportation services that allow people and goods to access the property. Revenue sources from property access charges include property taxes, development fees, and benefit assessment districts.
- **Subsidies:** Subsidies are those taxes and fees whose collection bears no connection to the use of the transportation system but whose revenues are dedicated for transportation purposes. Subsidies are collected at both the state and local level and include sales tax revenues from retail purchases other than motor fuel, as well as general fund revenues that are used for transportation purposes.

This section describes the characteristics of each funding source, how much revenue each generated for fiscal year 2003–04, and any statutory and programmatic limitations that restrict the use of funds for highways, transit, local streets and roads, or other specific

[1] This is the same grouping scheme as used in Adams, et al. 2001.

purposes. The section also presents revenue projections to the year 2020 for the major transportation revenue sources, using three alternative growth scenarios. It concludes with a summary of the current state of California's transportation revenue system and projects the overall revenue picture to 2020 in the absence of any transportation finance policy changes.

## Table 5 Estimated California Transportation Revenues, Fiscal Year 2003–2004

| Revenue Type | Revenues Raised (Millions of Dollars) | | | | Expenditure Categories | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TOTAL | Federal | State | Local | Local Roads | State Hwys | Public Transit | Toll Facilities | Other |
| **USER CHARGES** | | | | | | | | | |
| Per-Gallon Fuel Tax | 6,615 | *3,291* | *3,325* | | • | • | • | • | • |
| Sales Tax on Fuel (Public Transportation Account) | 209 | | *209* | | | | • | | |
| Sales Tax on Fuel (Prop. 42) | 289 | | *289* | | • | • | • | | |
| Tolls [a] | 560 | | | *560* | • | • | •[b] | • | • |
| Transit Fares | 1,096 | | | *1,096* | | | • | | |
| Vehicle Registration Fees | 1,674 | | *1,542* | *132* | | | | | •[c] |
| Vehicle License Fees | 97 | | *97* | | • | | | | • |
| Vehicle Weight Fees [a] | 800 | | *800* | | | • | | | •[d] |
| Misc. Fees | 249 | *246* | | *4* | | • | • | | |
| **Total User Charges** | **11,591** | **3,536** | **6,262** | **1,792** | | | | | |
| **PROPERTY ACCESS CHARGES** [e] | | | | | | | | | |
| Property Taxes and Assessments | 114 | | | *114* | • | | • | | |
| Benefit Assessments | 196 | | | 196 | • | | | | |
| Development Fees | 143 | | | 143 | • | | • | • | |
| **Total Property Access Charges** | **454** | **0** | **0** | **454** | | | | | |
| **SUBSIDIES** | | | | | | | | | |
| Sales Tax—State LTF (1/4%) | 1,148 | | *1,148* | | • | | • | | |
| Permanent Local Sales Tax | 1,744 | | | *1,744* | • | | • | | |
| Temporary Local Sales Tax | 1,473 | | | *1,473* | • | • | • | | • |
| General Revenue and Other | 4,438 | *29* | *198* | *4,212* | • | • | • | | |
| **Total Subsidies** | **8,803** | **29** | **1,346** | **7,429** | | | | | |
| **GRAND TOTAL** | **20,847** | **3,565** | **7,608** | **9,675** | | | | | |

*Sources*: Data sources are indicated in the text of this section. Totals may not align due to rounding errors.

a. Estimated.

b. Some revenues from the Bay Area Toll Authority, Golden Gate Transit District, and I-15 HOT lanes are used to fund public transit service.

c. California Highway Patrol, Department of Motor Vehicles, Local Service Authorities for Freeway Emergencies, Local Abandoned Vehicle Abatement Service Authorities, Air Quality Management Districts.

d. Department of Motor Vehicles.

e. Estimates are lower bounds.

The revenue forecasts presented in this section are based on three alternative futures: [2]

- **A baseline scenario**, based on real per-capita trends over the past 15 years. This scenario assumes that inflation will remain near 3% (approximately the average rate for 1985–2004), and that population growth with match the state's official forecasts (6.8 million new residents by 2020).
- **A high-revenue growth scenario**, which assumes that inflation will be only 2.5% (the average for 1994–2004), and that population will grow at a rate 20% faster than the state anticipates (8.2 million new residents by 2020).
- **A low-revenue growth scenario**, which assumes that inflation will be 3.5% (just under the average for 1980–2004), and that population will grow at a rate 20% slower than the state anticipates (5.5 million new residents by 2020).

No projections were developed for sources for which insufficient data was available or which raised relatively small amounts of revenue.

## USER CHARGES

The first category of revenue sources, user charges, are taxes and fees closely linked to the use of the transportation system. They include fuel taxes, tolls, transit fares, severance taxes, and other state and federal fees that are assessed only from users of the transportation system and are earmarked for transportation expenditures.

Revenues from sales taxes on motor fuel are also included in this section under user charges, though strictly speaking these are not true user fees. California does not have an independent motor fuel sales tax. Historically, revenues from the sales tax on motor fuel historically have been deposited into the state's general fund, just like all other sales tax revenues. Recently, however, the legislature attempted to dedicate funds from motor fuel sales taxes for transportation purposes. As such, motor fuel sales tax revenue does not create a new revenue source for the state, but rather appropriates existing general revenues for transportation purposes.

[2] It may be counterintuitive that higher inflation leads to lower revenues, and vice versa. But for taxes that are based on physical units (e.g., taxes levied per gallon of gasoline), the actual taxes rate in real terms declines over time due to inflation, a process that only accelerates when the inflation rate is high. The methods and assumptions used in these projections are discussed in more detail in Appendix C.

For fiscal year 2003–04, transportation revenues generated from all user charges identified in this report totaled nearly $11.6 billion, or about 55.6% of the total. Of this, about 30% was generated at the federal level, about 55% was generated at the state level, and about 15% was generated at the local level. Figure 3 summarizes transportation user charges and their relative level of revenues generated.

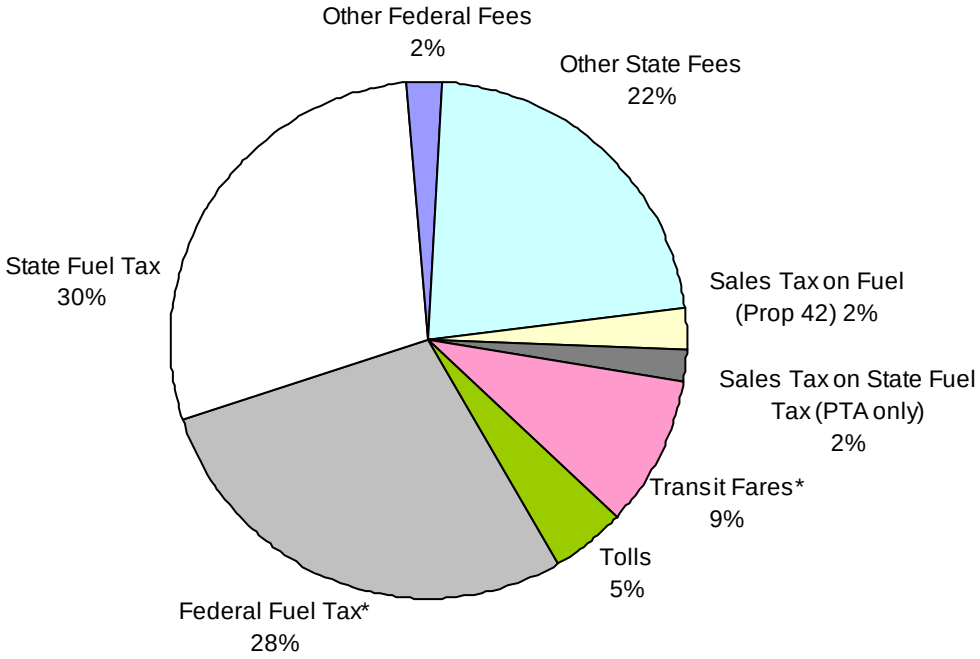


**Figure 3 Distribution of User Charges, Fiscal Year 2003–04**
*Sources*: Indicated in the text of this section.
*Note*: *Federal fuel tax and transit fares reported for fiscal year 2002–03.

## Per-Gallon Fuel Tax

Per-gallon fuel taxes are the largest source of transportation revenues. Combined federal and California fuel taxes generated over $6.6 billion in fiscal year 2003–04. The state constitution restricts expenditures of fuel taxes revenues to the maintenance and construction of public streets and highways, and fixed public mass transit guideways (California State Constitution, Article XIX).

## State Fuel Tax

The current California state fuel tax rate is 18¢ per gallon for both gasoline and diesel fuel. During fiscal year 2003–04, the State of California generated about $3.3 billion in revenues from the state fuel tax (California State Controller's Office, 2004a, 12). The state fuel tax in California dates back to 1923, when the legislature introduced a new gasoline tax of 2¢ per gallon. Until 1983, the tax slowly increased at irregular intervals to 9¢ per gallon. The latest increase in the state fuel tax rates was enacted by Proposition 111 in 1990, which over a five-year period doubled the state fuel tax rate from 9¢ per gallon to 18¢ per gallon to support implementation of the new transportation blueprint adopted the previous year. Since the 1990 increase, the legislature has not increased the state fuel tax for either gasoline or diesel.

**State Fuel Tax**

**Unit of taxation:**
Gallons of fuel

**Tax rate (gasoline & diesel):**
18¢/gallon

**Estimated revenues in 2004:**
$3.325 billion

**Projected revenues in 2020 (2005 $):**
$2.09–$2.63 billion

**Estimated per-capita revenues in 2004:**
$91

**Projected per-capita revenues in 2020 (2005 $):**
$49–$58

**Revenues restricted to:**
State highways, local streets and roads, transit

*(Sources in text)*

The majority of revenues from the state fuel tax are allocated to the State Highway Account. These can be spent on highways and some types of transit facilities. The remaining money is allocated to counties and cities. About 65% of total state fuel tax revenues go into the State Highway Account, 11% is allocated to counties, and 24% is allocated to cities. The share of money given to each city and county is determined according to a formula based on a combination of the jurisdiction's registered vehicles, population, county road miles, and assessed property valuation. Funds must be spent to maintain and construct local streets and roads. Further, for local jurisdictions to receive their shares of fuel tax revenue, they must maintain their contributions of local general funds for streets and highways (California Streets and Highway Code, §2127).

Though the state fuel tax currently represents the largest share of transportation revenues, these revenues will decrease in the future unless the legislature raises the tax rate. Assuming that the current state fuel tax of 18¢ remains, by the year 2020 state fuel tax revenues will plunge from

$3.3 billion in 2004 to approximately $2.1–$2.6 billion in 2005 dollars. And this drop will occur even as the population of the state and vehicle miles of travel increase.

Three factors will cause this decline in real revenues, as well as real revenues per capita and per vehicle mile traveled (Adams et al., 2001). First, because the fuel tax is a flat rate (18¢) per gallon of fuel sold, the value of the tax revenues erodes with inflation. Second, as the overall vehicle fleet becomes more fuel efficient, drivers pay less per mile traveled. Finally, the state's new tailpipe emissions standards for carbon dioxide ($CO_2$) will require automakers to sell hybrids and other vehicles that sharply reduce gasoline consumption. All three of these factors are included in the revenue forecast. In addition, if motor fuel prices continue to remain high, this will further encourage people to reduce the amount they drive and/or purchase more fuel efficient vehicles.

Figure 4 shows projections of likely fuel tax revenues through 2020. For the years before 2004, the chart shows the actual historic revenues, adjusted for inflation. Beginning in 2005, the graph illustrates three potential trajectories, representing future trends in the absence of policy changes under high-, medium-, and low-revenue growth scenarios. The graph also includes two dashed lines: these represent the confidence intervals around our estimates (the range that the actual values are 90% likely to fall within). For the purposes of clarity, the chart includes two of these dashed lines—one representing an upper bound above the high-revenue growth scenario, and another representing a lower bound below the low-revenue growth scenario.

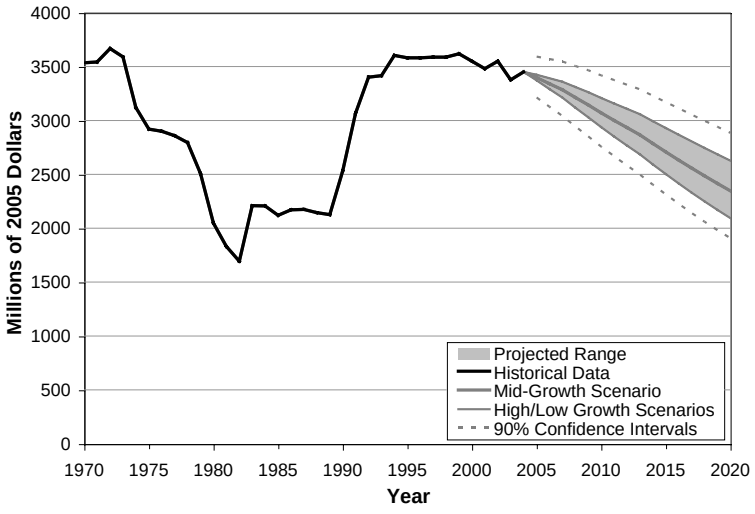


**Figure 4 Past and Projected California Motor Fuel Tax Revenues, 1970–2020 (2005 Dollars)**

*Source*: Author' analysis. See Appendix C for an explanation of methodology.

## Federal Fuel Tax

The current federal fuel tax is 18.4¢ per gallon for gasoline and 24.4¢ per gallon for diesel. Combined, these taxes generated $3.3 billion in revenues for highway and transit in fiscal year 2004 for the State of California (Federal Highway Administration, 2006a, Table FE-9). The federal fuel tax originated in 1932, as a 1¢-per-gallon levy originally intended to help cover a budget deficit. Later, it was used to help pay for war efforts. In 1956, Congress passed the Highway Revenue Act, which increased the federal fuel tax and transformed it into a strong, dedicated revenue source to fund construction of the Interstate Highway System. The 1956 act created a new Highway Trust Fund, ensuring for the first time that all motor fuel tax revenues would be protected for highway and road purposes. This approach continued until 1983, when Congress increased the tax from 5¢ to 9¢ per gallon and created a special Mass Transit Account within the Highway Trust Fund, which set aside some fuel tax revenues for transit purposes. Since 1983, the federal fuel tax rate has increased several times, most recently in 1993.

**Federal Fuel Tax**

**Unit of taxation:**
Gallons of fuel

**Tax rate:**
18.4¢/gallon (gasoline); 24.4¢/gallon (diesel)

**Estimated revenues in 2004:**
$3.291 billion

**Projected revenues in 2020 (2005 $):**
$2.29–$2.87 billion

**Estimated per-capita revenues in 2004:**
$90

**Projected per-capita revenues in 2020 (2005 $):**
$54–$63

**Revenues restricted to:**
Use for state highways, public transit

*(Sources in text)*

Most of the federal fuel tax is allocated to the Highway Account, which receives 15.44¢ per gallon from the gasoline fuel tax and 24.3¢ per gallon from the diesel fuel tax. The Mass Transit Account receives 2.86¢ per gallon from the gasoline fuel tax. The remaining 0.1¢ per gallon, from both the gasoline and diesel fuel tax, are deposited into the Leaking Underground Storage Tank Trust Fund. Though federal fuel taxes are the main revenue source for the Highway Trust Fund, it also receives funds from truck-related federal taxes and fees.

Funds deposited into the Highway Trust Fund are not redistributed back to the states on a dollar for dollar basis. Rather, funds are allocated to individual states based on various formulas determined by the federal government. In 2004, California paid $2.95 billion in

user fees to the Highway Trust Fund, and received back its full contribution, plus an additional 11%.[3] Historically though, California has been a donor state; it has received back only 96¢ for each dollar it has paid into the Highway Trust Fund since 1956 (Federal Highway Administration, 2006a, Table FE-221). Under SAFETEA-LU, California is projected to receive a return starting at 90.5% in FY 2005, and rising to 92% in FY 2009 (Federal Highway Administration, 2005).

Figure 5 shows the recent history of Highway Trust Fund allocations in California since 1992, and projects the future trend that would be expected in the absence of policy action by Congress. The future trend is not based on an analysis of federal policy, which changes annually and depends on Congressional appropriations, but by building upon the trends estimate for California's state gas tax revenues. It is assumed that future federal Highway Trust Fund allocations follow the same trajectory as future state gas tax revenues (in the absence of federal policy interventions), except that the effects of the new $CO_2$ emissions standards discussed in the previous section have been excluded.[4]

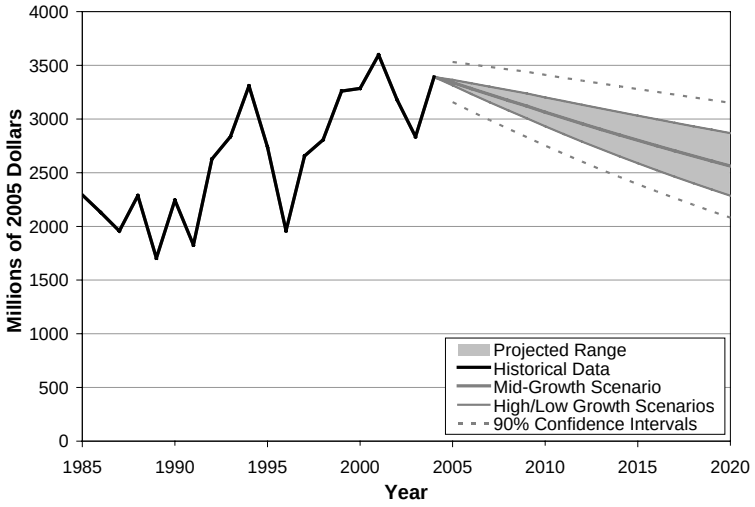


**Figure 5 Past and Projected California Revenues from the Federal Highway Trust Fund, 1985–2020 (2005 Dollars)**
*Source:* Authors' analysis. See Appendix C for an explanation of methodology.

[3] These figures and others in this paragraph exclude federal motor fuel taxes paid into the Mass Transit Account, as well as federal funds received for transit.

[4] In practice, these new emissions standards will erode contributions to the Highway Trust Fund from California, New York, and other states adopting the standards. The extent to which the revenues these states receive back from the HTF are protected from this will ultimately be determined by Congress.

## Tolls

Tolls are fees that drivers pay to use specific transportation facilities, such has bridges, highways, or high-occupancy/toll (HOT) lanes.[5] For fiscal year 2003–04, toll facilities in California generated over $560 million in revenues. California has a total of 117 miles of toll roads and bridges, which are located in the counties of San Francisco, Orange, and San Diego, and are operated by six different government entities (Transportation Corridor Agencies, 2004a, 2).[6] Table 6 presents a summary of current toll facilities in California, as well as annual revenues generated from the facilities in fiscal year 2003–04.

**Tolls**

**Unit of taxation:**
Vehicles

**Tax rate:**
Varies by facility and vehicle type

**Estimated revenues in 2004:**
$0.56 billion

**Estimated average toll charge in 2004:**
$2.25/vehicle

**Revenues restricted to:**
Toll facilities and public transit

*(Sources in text)*

For the most part, toll revenues are used to fund financing of capital outlay, maintenance, and operations of the toll facilities themselves. Some revenues from the Bay Area Toll Authority, Golden Gate Bridge, and the I-15 HOT lanes are used to subsidize transit services, and highway and transit capital projects. In addition, the Bay Area Toll Authority administers a special $1 region-wide toll surcharge on its seven bridges that funds a wide array of congestion relief projects, including improvements to highways, local roads, and public transit.

Currently, all of California's major toll facilities are publicly owned and operated. However, one of southern California's toll roads, the SR-91 Express Lanes, was originally financed, built, and operated through a public-private partnership before the Orange County Transportation Authority acquired full ownership. In addition, SR-125, a new $775 million toll facility under construction in San Diego County, is being funded by a private consortium that will build the facility and operate it for 35 years before returning it to the state (South Bay Expressway, 2006).

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5 In a HOT lane, carpools travel for free but a toll is assessed on single-occupant vehicles whose drivers wish to use the lane. In California, HOT lane tolls are collected through electronic toll collection systems. Toll prices vary by toll facility.

6 The 17-Mile Drive, a privately-owned toll road located in Monterey County, is not included in the discussion in this section since it functions as a tourist attraction rather than a transportation facility.

Projections of future toll revenues were beyond the scope of this study. Factors that make future toll revenues difficult to predict include changes in population and activity patterns, changes in toll rates, and the construction of new capacity elsewhere in the system.

**Table 6 Toll Facilities in California, Fiscal Year 2003–2004**

| Toll Authority and Facility | Type of Toll Facility | Revenue Generated (Millions of Dollars) |
|---|---|---|
| Bay Area Toll Authority (San Francisco Bay Area) [a]<br>• Antioch Bridge<br>• Benicia-Martinez Bridge<br>• Carquinez Bridge<br>• Dumbarton Bridge<br>• Richmond-San Rafael Bridge<br>• San Francisco-Oakland Bay Bridge<br>• San Mateo-Hayward Bridge | Bridge | 294 |
| Golden Gate Bridge, Highway and Transportation District (San Francisco County)<br>• Golden Gate Bridge | Bridge | 84 |
| San Diego Association of Governments<br>• I-15 (San Diego County) | HOT Lane | 2 |
| Orange County Transportation Authority<br>• Route 91 | HOT Lane | 27 |
| Transportation Corridor Agencies (Orange County)<br>• State Route 73<br>• State Route 133<br>• State Route 241<br>• State Route 261 | Toll Road | 153 |
| **Total Toll Revenues** | | **560** |
| *Sources*: Bay Area Toll Authority 2005, 11; Golden Gate Bridge, Highway and Transportation District 2004, 15; Derek Toups, e-mail to author, February 2006; Transportation Corridor Agencies 2004b, 17. | | |
| *Note*: State Route 125 is currently being constructed in southern California and is not included in this table. See text for more information. | | |

a. In addition to the base $1 toll charge, the toll revenues reported for BATA include the $1 seismic retrofit surcharge (toll crossings cost $2). In 2004, voters approved an additional $1 toll increase to fund transportation projects throughout the region.

## Transit Fares

**Transit Fares**

**Unit of taxation:**
Passenger trip

**Tax rate:**
Varies by agency

**Estimated revenues in 2004:**
$1.1 billion

**Estimated average toll charge in 2004:**
$0.77/passenger

**Revenues restricted to:**
Public transit

*(Sources in text)*

Like tolls, transit fares are arguably one of the most direct forms of user charges, as riders pay directly for each trip taken through the purchase of individual tickets, monthly passes, or other discount programs offered by transit agencies. In fiscal year 2003–04, transit fare revenues in California totaled $1.1 billion (California State Controller's Office, 2006b, Fig. 5). Revenues generated from transit fares are collected by the individual transit agencies and used for operation and maintenance costs of their respective transit systems. Hence, transit fare revenues do not go into a statewide transportation fund, but rather stay within the individual transit agencies that collect the fares.

It should be noted that fare revenues cover only a fraction of transit operators' operating costs. On a statewide level, in fiscal year 2003–04, fare revenues comprised only about 17.8% of the total operating budget for transit operators (California State Controller's Office, 2006a, v). This rate ranges among the different transit operators in California, anywhere from 5% for some of the smaller transit operators to nearly 50% for the state's larger transit operators, such as the Bay Area Rapid Transit District. Hence, transit agencies rely heavily on state and local funds, and to a lesser degree on federal funds, to subsidize transit operations.

Transit fare revenues were not projected for this study because these will depend on a wide range of unpredictable factors, including the financial circumstances and market changes experienced by the state's dozens of individual transit operators.

## Local, State, and Federal Fees

California residents pay a variety of state and federal fees associated with the ownership, and use of motor vehicles. These fees consist of vehicle registration, driver's license, vehicle license, and motor-vehicle weight fees. Together, they generated $2.8 billion in revenue in California during fiscal year 2003–04, of which over 86% are generated at the state level.

## State and Local Vehicle Registration Fees

Vehicle registration fees are flat annual fees collected by the state that by statute can only be used for the state administration and enforcement of traffic and vehicle laws (California Vehicle Code, §9250.9). Part of the annual vehicle registration fee is a $31 flat fee per vehicle. Of this, about 70% currently goes to the California Highway Patrol (California Department of Transportation, 2004, 31).

**Vehicle Registration Fees**

**Unit of taxation:**

Registered vehicles

**Tax rate:**

Base fee is $31/passenger car

**Estimated revenues in 2004:**

$1.674 billion total; $687 million for $31 base fee

**Projected revenues from $31 base fee in 2020 (2005 $):**

$460–$580 million

**Estimated per-capita revenues from $31 fee in 2004:**

$19.10

**Projected per-capita revenues from $31 fee in 2020 (2005 $)**

$10.90–$12.80

**Revenues restricted to:**

California Highway Patrol, Department of Motor Vehicles, regional freeway services, regional air quality districts

*(Sources in text)*

Figure 6 shows past and projected vehicle registration revenues for the State of California through the year 2020 (see Appendix C for more detailed information on projections). Assuming that the current statewide vehicle registration fee has been and remains $31, revenues from vehicle registration fees are projected to decrease from the current levels of $697 million per year to $460–580 million in 2020 (2005 dollars). This decline in real revenues reflects the fact that even though the population and resulting vehicle ownership in California are expected to increase over the next twenty years, inflation will significantly erode the value of the revenue.

In addition to the $31 vehicle registration fee, a $9-per-vehicle fee is collected specifically for the California Highway Patrol. For fiscal year 2003–04, this fee generated approximately $195 million.[7] Beyond these two statewide vehicle registration fees, many counties and regional air pollution districts collect vehicle registration fees for specific purposes, such as service authorities for freeway emergencies, theft deterrence and traffic law enforcement, and emission reduction programs. Fees for these programs are usually $1 to $4 per vehicle. Total revenue from vehicle registration fees for these programs is an

[7] Vehicle registration revenues generated from the $9 CHP fee are calculated by multiplying the number of registered vehicle in fiscal year 2003-04 by the $9 registration fee.

estimated $132 million (California State Controller's Office, 2004b; 2006a, Table 8; authors' estimates).

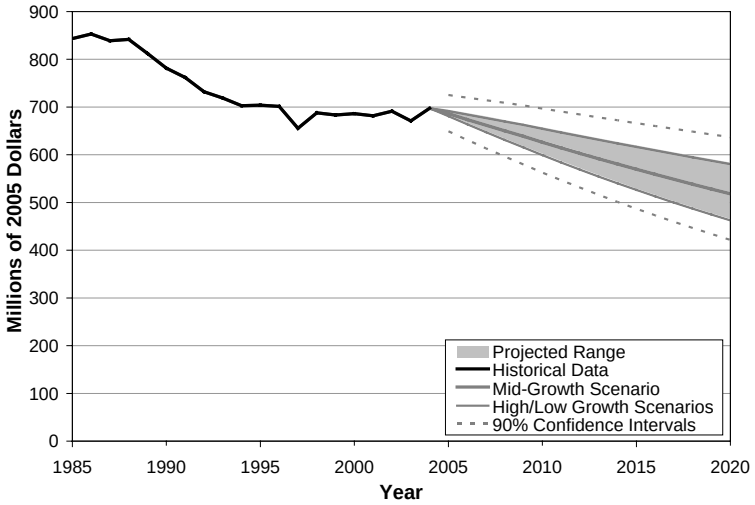


**Figure 6 Past and Projected Revenues from $31 Personal Vehicle Registration Fees, 1985–2020**

*Source*: Authors' analysis. See Appendix C for an explanation of the methodology.
*Note*: For illustrative purposes, this graph assumes that the fee has been fixed at $31 throughout this period.

## State Driver's License Fees

The current driver's license fee in California ranges from $20 to $64 depending on the class of license issued (California Vehicle Code, 6270). Drivers must renew their licenses every one to five years, depending on their driving records. The revenues from license fees can only be spent on administering the Department of Motor Vehicles or other expenses to administer and enforce traffic and vehicle laws (California Vehicle Code, 42271).

## State Truck Weight Fees

Truck weight fees make up approximately $800 million of the total state fees in fiscal year 2003–04, and are mostly dedicated to the State Highway Account. A portion of the revenues is also allocated to the Department of Motor Vehicles to cover administrative expenses.

Over the last five years, revenues from truck weight fees have been unstable due to changes in how fees are charged and administered. California had been the last remaining state to

charge truck weight fees based on an empty truck load, and in 2001 changed its system to conform to the national standard of charging fees based on a truck's loaded weight. In 2002, after this change, the number of tractors registered in the state dropped sharply, and the Department of Motor Vehicles may have delayed collection of the new fee (Legislative Analyst's Office, 2003, A-24). In response to the drop in revenues, the state legislature raised the fee by 20%, and also specified that if revenues in 2004–05 fell below specified projections, then the state could raise fees again to offset the loss in revenues (California Department of Transportation, 2004, 28).

## State Vehicle License Fees

California's vehicle license fees are charged in lieu of a personal property tax on motor vehicles and certain trailers. Since its inception, this has been a general revenue source for county and municipal governments that is collected by the state for reasons of administrative efficiency. In California, the annual tax rate was historically 2% of a vehicle's assessed value. In 1999 the legislature began reducing the rate, which today is 0.65%.

Although the revenues that local governments receive from the vehicle license fee are unrestricted, many governments choose to dedicate a portion of their revenues for street and road maintenance. In 2003–04, about $97 million statewide was set aside by local governments for this purpose (California State Controllers Office, 2005, Figs. 11, 17).

## Federal Fees

The federal government charges a range of different fees on commercial vehicles. These include a tax on the purchase of tires over 40 pounds, a 12% sales tax on the purchase of trucks and tractors over 33,000 pounds and trailers over 26,000 pounds, and an annual fee on heavy vehicles over 55,000 pounds (Federal Highway Administration, 2006a, FE21-B). For fiscal year 2003–04, the State of California received about $246 million in revenue from these federal fees (Federal Highway Administration, 2006a, FE-9). All of these revenues are deposited into the Highway Account of the Highway Trust Fund, and were included above in the discussion of that fund. These revenues are used for a variety of state administered transportation projects.

## State Sales Taxes on Fuel

In California, state and local governments levy sales taxes on all goods purchased within the state (with certain exceptions for food, medicines, etc.). These taxes were created as a source of general revenues, but increasingly, legislators and voters have supported setting aside for transportation purposes the revenues derived from taxing sales of motor fuels. This report classifies these revenues as user charges, since their collection is directly related to the use of the transportation system. Other sales taxes dedicated for transportation purposes, such as those that apply to retail purchases more generally, are considered subsidies and are discussed in more detail later in the section.

Strictly speaking, sales taxes on fuel could be considered subsidies, not user fees. California has not created a special tax that applies specifically to the dollar value of motor fuel transactions. The state has simply chosen to identify a portion of an existing revenue stream that was established for the general welfare of the state, and to earmark it for transportation purposes. Nonetheless, the idea of dedicating taxes derived from gasoline sales to transportation improvements closely follows the logic of user fees and has made this approach a clear political winner. Just over $500 million in transportation revenues were generated from sales tax on fuel for fiscal year 2003–04.

California first began to dedicate some sales tax revenues from fuel for transportation purposes in 1971, when a portion of these revenues was deposited into the state's Public Transportation Account. More recently, in 2000, the passage of Proposition 42 made the dedication of all state sales tax revenues on fuel for transportation purposes permanent, subject to certain conditions. In 2002, the Planning and Conservation League attempted to push this concept further by dedicating 30% of the revenues derived from motor vehicle sales (about $1 billion per year) to transit, safety, and congestion relief projects, but this proposal was defeated at the ballot box (California Budget Project, 2002).

## Public Transportation Account

California's 1971 Transportation Development Act dedicated a portion of the sales tax revenues from fuel for public transit purposes. Today, the Public Transit Account (PTA) receives three distinct revenue streams created by the Transportation Development Act:

- 4.75% state sales tax on diesel fuel [8]
- 4.75% state sales tax on half (9¢ per gallon) of the state gasoline tax
- Funds equivalent to the revenue from a 4.75% sales tax on all goods minus a 5% sales tax on all goods except gasoline (known as spillover revenue)

**State Tax on Fuel (PTA)**

**Unit of taxation:**
For gasoline, 9¢ of state tax per gallon of fuel sold; for diesel, dollar value of fuel sold, including federal 24.4¢ tax on diesel

**Tax rate:**
4.75%

**Estimated revenues in 2004:**
$209 million

**Projected revenues in 2020 (2005 $):**
$240–$257 million

**Estimated per-capita revenues in 2004:**
$5.73

**Projected per-capita revenues from $31 fee in 2020 (2005 $)**
$5.66

**Revenues restricted to:**
Use by public transportation

*(Sources in text)*

In 2004, the PTA received $66 million from the sales tax on gasoline and $143 million from the sales tax on diesel fuel (California Department of Transportation, 2003, 25). Half of PTA revenues are allocated to transit investments administered by Caltrans, and the remaining half are allocated to local governments and transit districts through the State Transit Assistance Account.

Funds deposited into the PTA are intended to be used solely for transit purposes. However, the spillover funds have been routinely diverted to other programs. In 2003–04, these revenues were transferred to the general fund. Advocacy groups have opposed these diversions, arguing that they undermine critical funding for public transit (Transportation and Land Use Coalition, 2006).

Figure 7 shows past and projected motor fuel sales tax revenues destined for the PTA through the year 2020 (see Appendix C for more detailed information on projections). From this, it is projected that by the year 2020, revenues from this source will reach $240–$257 million (2005 dollars). Sales taxes have the advantage that they keep up with

[8] The taxable sales price of diesel fuel includes the federal diesel tax of 24.4¢ per gallon, but *not* the state fuel tax of 18¢ per gallon.

inflation, since revenues generated depends on the sales price of goods. This means that even if the sales tax rate is not raised, as long as the price of goods increases with inflation, the revenues generated will also increase proportionately in terms of real dollars.

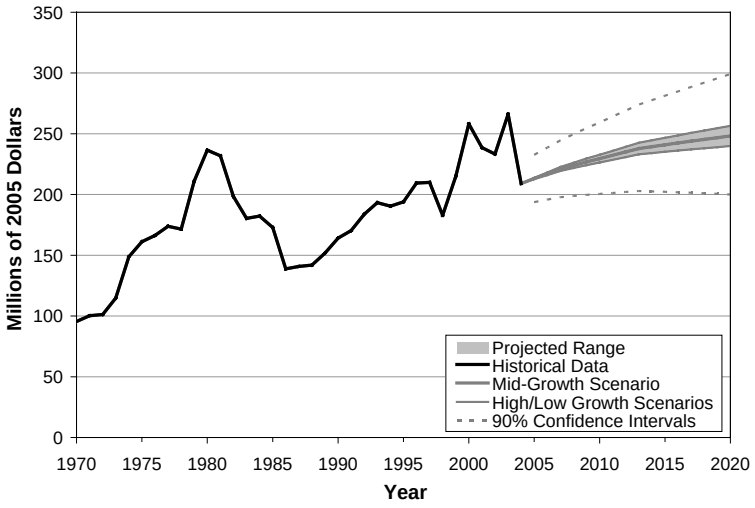


**Figure 7 Past and Projected Public Transportation Account Revenues from Sales Taxes on Motor Fuel, 1970–2020**

*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

## Proposition 42

Prior to 2000, all state sales tax revenues from the sale of fuel, with the exception of those funds dedicated to the Public Transit Account (see preceding section), were deposited into the state's general fund. In 2000, Governor Gray Davis proposed that revenues from the state's portion of the sales tax on gasoline be dedicated to support his new $5.3 billion Traffic Congestion Relief Program. In March 2002, nearly 70% of voters approved Proposition 42, which changed the state constitution to permanently dedicate the state's portion of the sales tax on gasoline to transportation. Proposition 42 will generate approximately $1.3 to $1.5 billion per year for the new Transportation Investment Fund. Approximately 40% of these revenues are allocated for transportation improvement projects funded under the State Transportation Improvement Program, 40% are allocated to cities and counties for local streets and roads improvements, and the remaining 20% are allocated to public transit (California Department of Transportation, 2004, 28).

**Sales Tax on Fuel (Proposition 42)**

**Unit of taxation:**

Value of fuel sold minus components included in PTA revenue

**Tax rate:**

5%

**Estimated revenues in 2004:**

$295 million; $1.3–$1.5 billion if fully allocated

**Projected revenues in 2020 (2005 $):**

$1.6–$1.7 billion*

**Estimated per-capita revenues in 2004:**

$8.00; $38.35 if fully allocated

**Projected per-capita revenues in 2020 (2005 $)**

$38.00

**Revenues restricted to:**

Local streets and roads, state highways, public transit

* Potential revenues assume funds are not diverted. As discussed in text, these revenues historically have not been available for transportation purposes.

*(Sources in text)*

Proposition 42 also authorizes the legislature (with a two-thirds majority) to suspend gasoline sales tax redirection if the state has an annual budget deficit. This provision introduces a high degree of uncertainty and unpredictability for this new source of funding for transportation (California Department of Transportation, 2004, 29). Since its enactment, Proposition 42 has been suspended twice. In fiscal year 2003–04, the redirection of funds was partially suspended, and in fiscal year 2004–05 it was fully suspended. Due to the partial suspension of funds in 2003–04, only about one-quarter of the funds that should have been available were actually transferred to the Transportation Investment Fund.

Governor Schwarzenegger proposes amending Proposition 42 to prohibit any suspension after 2006–07 (Legislative Analyst's Office, 2005, 177). Under current law, the suspended Proposition 42 amounts from 2003–04 are due to be repaid by 2007–08 and those from 2004–05 are due in 2008–09. Since the repayments would total over $2 billion, the administration proposes to spread the repayment of the funds over 15 years (Legislative Analyst's Office, 2005, 96).

## State and Local Severance Fees

A severance tax is a levy imposed on natural resource extraction enterprises, usually on the basis of the weight or value of the resources removed from a given site. California imposes two such taxes: the Timber Yield Tax, the proceeds of which are distributed to counties as a general revenue source, and a small oil severance fee that is used to fund administrative costs of state energy programs. An initiative proposed for the November 2006 ballot would increase oil severance fees sharply to bring them in line with other oil-producing states, and use the revenues to pay for research and deployment of alternative fuels (Jurgens, 2006).

In other states, the severance tax works more like a traditional user fee. Near timber and mining operations, heavy trucks transporting raw materials can cause significant road damage, so taxes levied on the basis of the weight or volume of extracted materials are a logical source of funds for road repair. At least four states (Alabama, Minnesota, Tennessee, and Virginia) authorize local governments to impose severance taxes for road maintenance purposes (Goldman, Corbett, and Wachs, 2001, p. 20).

## Property Access Charges

Property access charges are similar to user charges in that the payments are linked to the use of the transportation system. While travelers pay user fees in exchange for traveling, property owners pay property access charges on the premise that they should cover part of the cost to provide roads and other transportation services that allow people and goods to reach their properties. Property access charges include property taxes, development fees, and benefit assessment districts. Unfortunately, no statewide system exists to report all property access charges and how they are spent, so the actual amount of revenue generated for transportation is unknown.

## Property Tax

Property taxes are assessed biannually on the value of homes, and make up a substantial amount of the total revenue generated from property access charges. For fiscal year 2003–04, direct revenues from property taxes totaled $85 million for transit agencies and $29.7 million for streets and roads (California State Controller's Office, 2006a, vi; California State Controller's Office 2006b, xiv). These revenues are equivalent to what would be generated by a 0.0036% property tax on the assessed value of property statewide. The actual value may be much higher, since these types of local fiscal data are often incomplete.

**Property Tax**

**Unit of taxation:**
Assessed valuation of property

**Effective tax rate:**
0.0036%

**Estimated revenues in 2004:**
$114 million

**Projected revenues in 2020 (2005 $):**
$157–$168 million

**Estimated per-capita revenues in 2004:**
$3.30

**Projected per-capita revenues in 2020 (2005 $)**
$3.60–$3.80

**Revenues restricted to:**
Unrestricted

*(Sources in text)*

Figure 8 shows how property tax revenues are projected to grow over the next 15 years if local governments and taxing districts continue to dedicate similar amounts of property tax for transportation purposes as in the past.

Because property taxes are a major component of local general revenues, they are also the underlying basis for much of the general revenue subsidies that transportation receives from the local level. The transportation revenue derived from general fund subsidies are more than ten times larger than the amount derived from directly earmarked property taxes.

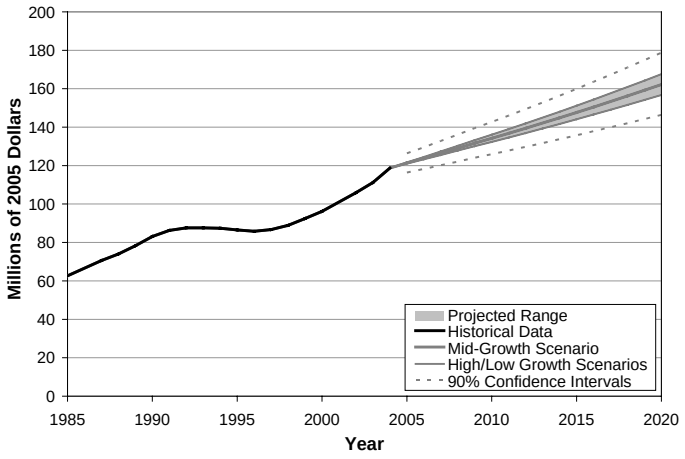


**Figure 8 Past and Projected Transportation Revenues from Property Taxes in California, 1985–2020**

*Source:* Authors' analysis. See Appendix C for an explanation of methodology.

## Other Property Access Charges

Since funding levels from property taxes decreased after the passage of Proposition 13 in 1978, some local governments have started relying on developer exactions and benefit assessment districts to supplement local transportation revenues.

Development exactions are levied on developers in exchange for the approval to proceed with the project. The level of the exaction is based on estimates of the public infrastructure costs necessary to support a new development. Development exactions are not always monetary payments, but can also include land dedicated for public infrastructure, or the actual provision of the infrastructure required to support the new development.

Development exactions are levied based on the need to construct and maintain new infrastructure such as public schools, parks, streets, and roads that will serve development. Since there is no systematic statewide reporting system for development fees, the total amount of revenues generated from development fees is unknown. One known part of the picture, however, is that transportation planning agencies (including metropolitan planning organizations and county transportation authorities) collected over $143 million in development fees for transportation purposes in fiscal year 2003–04 (California State Controller's Office, 2005, vi).

Benefit assessment districts are another property access fee that local governments use to supplement local transportation revenues. In 1911, the State of California granted local

governments the authority to assess fees on property owners within a defined benefit assessment district in order to pay for specific improvements that will directly benefit the property owners. Originally, local governments were allowed to create benefit assessment districts without voter approval. However, since 1996, the majority of affected property owners must vote to approve the formation of the district. As with development fees, the total amount of revenue generated from these districts for transportation purposes is not known at a statewide basis. In 2003–04, cities reported deriving over $196 million from special street assessment levies (California State Controller's Office, 2005, x), but this does not include benefit assessments for transit, pedestrian enhancements, or other purposes.

## SUBSIDIES

Subsidies are the revenues dedicated to transportation that are raised from taxes and fees that do not relate to the direct or indirect use of the transportation system. Subsidies are collected at both the state and local level, and include sales tax revenues from retail purchases other than fuel, as well as general fund revenues that are used for transportation purposes. Approximately $8.8 billion were raised from subsidies for transportation purposes in fiscal year 2003–04. Behind user charges, subsidies present the second largest transportation revenue source in California. And, as is discussed in more detail below, their significance is increasing as local jurisdictions increasingly opt to put transportation sales tax measures on the ballot.

## State Sales Tax

The current state sales tax rate in California is 7.25%. The 1971 Transportation Development Act, created a permanent subvention for local public transit services using a 0.25% general sales tax. Under this program, revenues are distributed back to the counties in which they were collected and deposited in the county's Local Transportation Fund (LTF).

**State Sales Tax**

**Unit of taxation:**
Taxable retail transactions

**Effective tax rate:**
0.25%

**Estimated revenues in 2004:**
$1.15 billion

**Projected revenues in 2020 (2005 $):**
$1.47–$1.57 billion

**Estimated per-capita revenues in 2004:**
$35.50

**Projected per-capita revenues in 2020 (2005 $)**
$31.90–$37.30

**Revenues restricted to:**
Public transit, local streets and roads

*(Sources in text)*

In fiscal year 2003–04, revenues from the 0.25% sales tax totaled $1.15 billion (California State Controller's Office, 2006b, xiv). By 2020, revenues are expected to rise to $1,470–$1,570 million per year (see Figure 9). Funds from the Local Transportation Funds can be used for a wide variety of transit programs, as well as for pedestrian and bicycle facilities. The law also stipulates that under certain conditions, counties with a population under 500,000 may also use the Local Transportation Funds for the construction and maintenance of local streets and roads (California Department of Transportation, 2005b, 1).

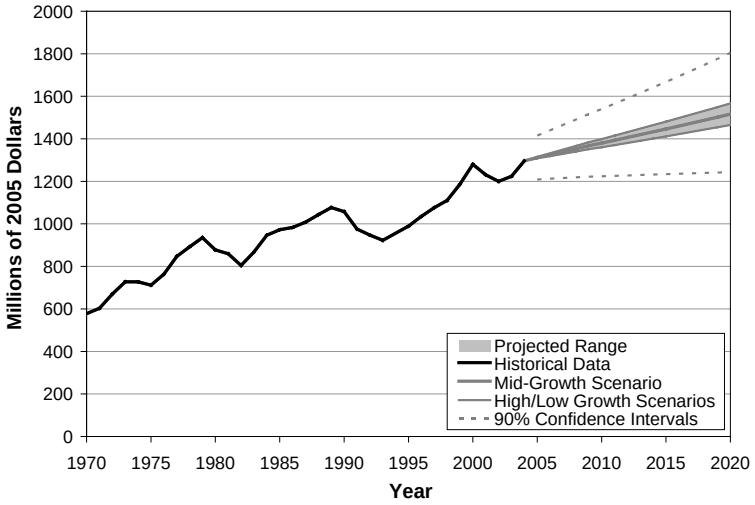


**Figure 9 Past and Projected Revenues from California's 0.25% Sales Tax, 1970–2020**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

## Local Option Transportation Sales Tax

The state constitution grants local governments the authority to impose their own transportation sales tax measures, subject to voter approval. Two common types of local option transportation sales taxes are permanent sales taxes, that do not have an expiration date, and limited-term transportation sales taxes. Together these two forms of local option transportation sales taxes generate approximately $3.2 billion annually.

### *Permanent Local Option Transportation Sales Tax*

In 1969, the California Legislature enacted a 0.5% sales tax in the counties forming the Bay Area Rapid Transit District (Alameda, Contra Costa, and San Francisco). In 1977, Assembly Bill 1107 made this tax permanent, with 75% of the revenues dedicated to the Bay Area Rapid Transit system and the remaining quarter administered by the Metropolitan Transportation Commission and distributed among the transit authorities in the counties covered by the district between AC Transit and the San Francisco Municipal Railway (Metropolitan Transportation Commission, 2004).

**Permanent Local Option Sales Tax**

**Unit of taxation:**
Taxable retail transactions

**Effective tax rate:**
0.5% to 1.0%

**Estimated revenues in 2004:**
$1.74 billion

**Projected revenues in 2020 (2005 $):**
$1.84–$1.9 billion

**Estimated per-capita revenues in 2004:**
$47.80

**Projected per-capita revenues in 2020 (2005 $)**
$42.00–$43.30

**Revenues restricted to:**
Local streets and roads, public transit

*(Sources in text)*

Four counties in California have passed voter approved permanent sales tax measures. San Mateo, Santa Clara, and Santa Cruz have all levied 0.5% sales taxes, with revenues exclusively dedicated for transit purposes. Los Angeles has passed two separate, permanent 0.5% sales taxes, for a total of a 1% sales tax, which the county is authorized to spend on road projects, in addition to transit purposes.

Combined, these permanent transportation sales taxes generate about $1.7 billion annually (authors' estimate, see Appendix C for methodology). Projecting this to the year 2020, it is estimated that they will grow to $1.8–$1.9 billion (see Figure 10). This estimate appears to be lower than recent trends because the state's population forecasts for these counties assumes slower average growth in the future.

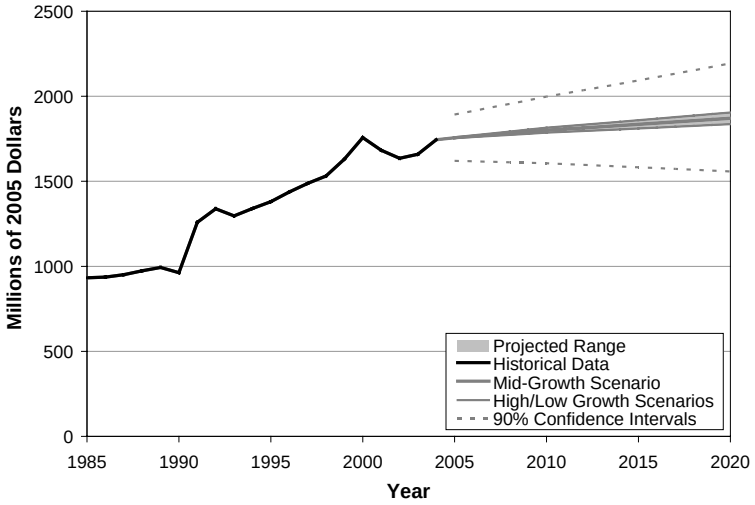


**Figure 10 Past and Projected Transportation Revenues from Permanent Local Sales Taxes, 1985–2020**

*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

### *Limited-Term Local Option Transportation Sales Tax*

In recent years, local option sales tax measures have increased in popularity. Currently 16 counties within California use limited-term sales tax measures to subsidize local transportation revenues.[9] Limited-term sales tax measures generate an estimated $1.47 billion per year.

**Limited-Term Local Option Sales Tax**

**Unit of taxation:**
Taxable retail transactions

**Effective tax rate:**
0.25% to 1.0%

**Estimated revenues in 2004:**
$1.47 billion

**Projected revenues in 2020 (2005 $):**
$1.35–$1.46 billion

**Estimated per-capita revenues in 2004:**
$40.30

**Projected per-capita revenues in 2020 (2005 $)**
$31.80–$32.30

**Revenues restricted to:**
State highways, local streets and roads, public transit

*(Sources in text)*

Limited-term sales tax measures have emerged over the last two decades as a valuable transportation funding source. Beginning in 1984, the state legislature authorized certain local governments to place limited-term sales tax measures of up to 1% on the ballot for voter approval. By the late 1980s, these powers were extended to all counties in California.

The legislature stipulates that limited-term sales taxes must expire after a specified lifetime, and that funds be earmarked for projects specified in the ballot measure. Generally speaking, a large portion of the limited-term sales tax revenues are earmarked for capital projects, with a more limited use for maintenance projects or transit operations.

Originally, the law stipulated that voters could approve limited-term sates tax measures with only a simple majority vote. However, in 1986, voters passed state Proposition 62, which required that new special taxes, including local transportation sales taxes, obtain a two-thirds majority vote. This makes the approval of such measures harder to pass and increases the future uncertainty of revenue sources from limited-term sales tax measures. Proponents of limited-term sales taxes fought Proposition 62 in court in an attempt to maintain the simply majority vote requirement. Not until the early 1990s was Proposition 62 finally upheld (Crabbe et al., 2002, 4).

[9] These counties include: Alameda, Contra Costa, Fresno, Imperial, Marin, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, and Sonoma. Two other counties imposed temporary local option sales taxes for transportation that have since expired: San Benito (1989–1998) and Madera (1990–2005).

Since their inception, revenues from limited-term sales taxes have been primarily spent on highways, followed by transit operations and capital costs, local streets and roads (Self-Help Counties, 2005).

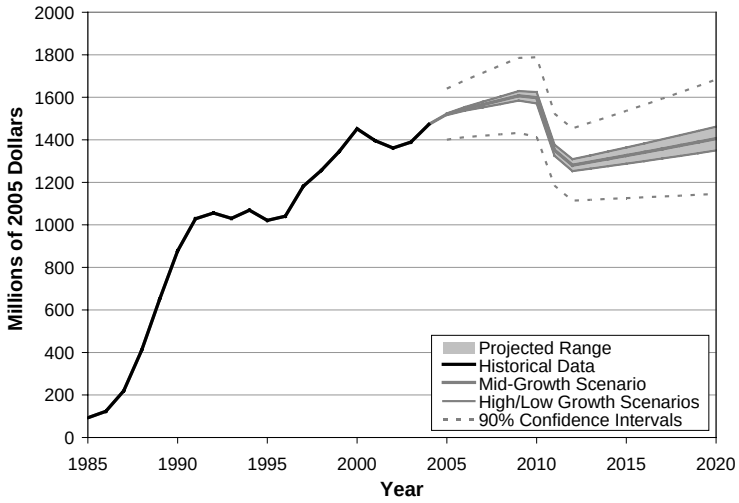


**Figure 11 Past and Projected Transportation Revenues from Limited-Term Local Sales Taxes, 1985–2020**

*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

Figure 11 presents past and projected limited-term sales tax revenues for the state of California through the year 2020 (see Appendix C for more detailed information on projections). Assuming that no new transportation sales tax measures pass, then it is projected that, by the year 2020, revenues from these local sales tax measures will be $1.35 to 1.46 billion (2005 dollars). Sales taxes have the advantage that they keep up with inflation, since revenues based on retail prices. However, because four of these limited-term sales tax measures are due to expire between 2010 and 2012 (Imperial, Orange, San Joaquin, and Santa Barbara counties), total revenues will drop sharply in those years unless voters approve extensions of the tax.

## General Funds and Other Sources of Revenue

General revenues also comprise a large portion of subsidies for transportation funding, although their exact levels are unknown. For the purposes of this study, this category includes direct appropriations from a government's general fund, or any of a wide range of other revenue instruments not classified here—including income taxes, investment

income, lodging and other tourism-related taxes, property transfer and mortgage recording taxes, utility taxes, payments in lieu of taxes, fines, and many other sources.

In 2003–04, all levels of government spent over $4.4 billion in general and miscellaneous funds on transportation in California. This includes over $4.2 billion in local subsidies for highways, transit operations, and local streets (California State Controller's Office, 2005, x, xiv; 2006a, vi, viii; 2006b, vi). It also includes $28.5 million in Federal Forest Reserve funds for local roads (California State Controller's Office, 2005, xiv), and $198 million in state subsidies to transit capital projects (California State Controller's Office, 2006a, viii).

Cities and counties are required by law to maintain a certain level of expenditures on streets and roads out of their general funds as a precondition to receiving their share of the state fuel tax revenues (California Department of Transportation, 2004, 30). Total general fund revenues for transportation purposes spent by local governments are not easily projected, since there are no guidelines governing how much of general fund revenues should be allocated for transportation purposes. However, since property taxes are one of the dominant sources of revenue at the local level, it can be expected that available general fund revenues will grow over time in a similar manner to the property tax.

## SUMMARY

As this section has outlined, California's transportation funding system is supported by over a dozen major revenue sources, each of which is guided by a complex system of statutory and programmatic limitations. Some of these sources are more robust over time than others. Along with factors such as the state's economy and population growth, the inflation rate is an extremely important determinant of the fiscal fortunes of the transportation sector. As Table 7 indicates, the property tax has the most robust growth rate of the tax options discussed here, and the motor fuel tax has the least.

**Table 7 Historic and Projected Revenue Trends for General Tax Types**

| Revenue Source | Real Annual Per-Capita Revenue Growth, 1985–2004 (%) | Projected Real Growth Rate 2005–2020 (%) | | | Tax Needed to Raise $1 Billion in 2005 |
|---|---|---|---|---|---|
| | | Low [a] | Base [b] | High [c] | |
| Motor Fuel Tax | (2.75) | (3.13) | (2.44) | (1.75) | 5.3¢/gal. |
| Vehicle Registration Fee | (2.07) | (2.03) | (1.33) | (0.64) | $33.52 |
| Sales Tax | (0.19) | 0.76 | 0.97 | 1.17 | 0.19% |
| Sales Tax on Motor Fuel | 0.53 | 0.81 | 1.02 | 1.22 | 2.59% |
| Property Tax | 1.67 | 1.74 | 1.95 | 2.16 | 0.03% |
| Vehicle License Fee | 3.90 | 3.13 | 3.35 | 3.56 | 0.10% |

*Sources*: Authors' estimates. See Appendix C for details.

a. Low-growth scenario assumes 3.5% inflation and –20% population growth.
b. Baseline-growth scenario assumes 3% inflation and state forecast for population.
c. High-growth scenario assumes 2.5% inflation and +20% population growth.

Overall, the results suggest that California will, despite dramatic population growth, experience declining real transportation revenues. To illustrate the impacts of this for the bulk of California's transportation revenue sources, aggregate revenue forecasts were developed to 2020. (Revenue streams for which no forecast was developed, including tolls, transit fares, and general revenues, are excluded from these charts).

Figure 12 illustrates the funding picture under the low-revenue growth scenario. In this case, revenues from general sales taxes, sales taxes on motor fuel, and property access taxes grow slightly over time, but this is overwhelmed by a sharp drop in user fee revenues (fuel taxes and registration fees).

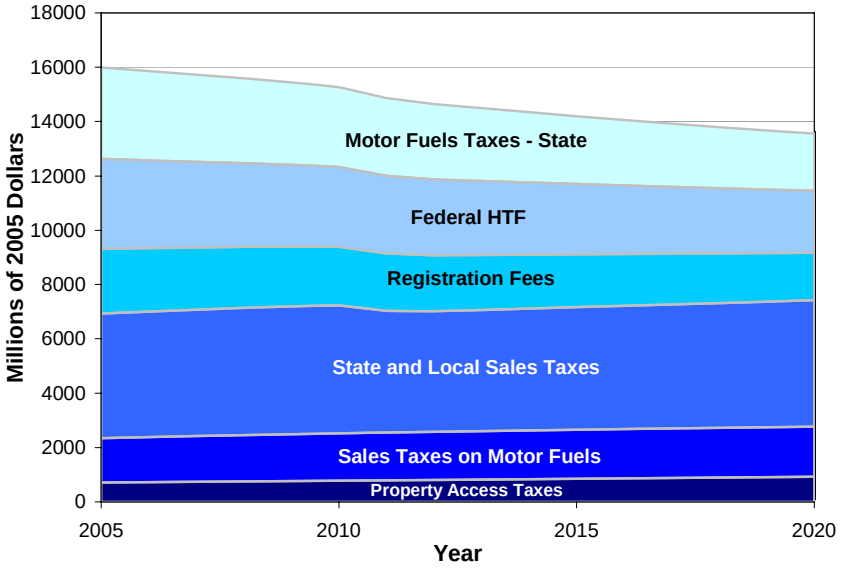


**Figure 12 Aggregate Projections for Major Revenue Sources, Low-Growth Scenario**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

In Figure 13, the high-revenue growth scenario, property access fees and subsidies grow more steadily, but this effect is counterbalanced by a more moderate drop in user fee revenues. The net effect is a slight decline in real revenues.

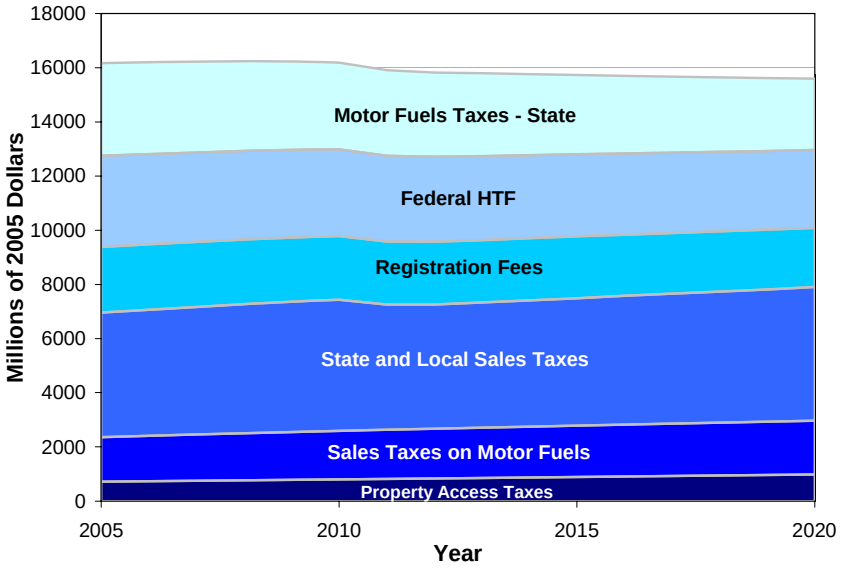


**Figure 13 Aggregate Projections for Major Revenue Sources, High-Growth Scenario**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

Even in this optimistic scenario, in which the state adds 8.2 million new residents and experiences only 2.5% annual inflation over the next 15 years, the state will have less available funding for transportation in 2020 than it does today, assuming no changes are made to increase revenues. The next two sections evaluate various options to improve that larger system, considering alternative funding mechanisms that could be implemented in California to secure the future of its transportation infrastructure.

# FACILITY-BASED REVENUE AND FINANCE

## INTRODUCTION

In the late 1800s, privately built toll roads were common in California. In all, 159 private toll facilities were built in the early years of the state, mostly in the mining regions of the Sierra Nevada (Klein and Yin, 1994). But since the early twentieth century, California has relied primarily on taxes and fees charged to all drivers, or to the population at large, to fund its transportation system. The practice of facility-based financing—charging travelers on the basis of each trip they make or service they use, and using the revenue to pay the costs of building and/or operating the facility used—became relatively rare in the state. Until the mid–1990s, the primary exceptions were transit, a service which charges most riders a per-trip fare, and the seven tolled bridges in the San Francisco Bay Area. Over the last decade, however, San Diego and Orange counties have experimented with greater reliance on facility-based revenue sources by building a small number of new tolled roads. Spurred by Congress, there has been growing interest nationally in expanding on this recent trend and making more use of facility-based finance options, especially road tolls.

This section explores the potential benefits for California of relying more extensively on facility-based revenue systems. Two important benefits arising from most facility-based revenue sources are the potential to borrow money against future expected revenues, and the potential for partnering with private sector firms to construct or operate the facility. Both these factors could help the state to build new infrastructure without raising existing state and local transportation taxes. At the same time, facility-based revenue options also present potential drawbacks, such as public resistance to tolls, safety and environmental hazards associated with toll plazas, the administrative costs of collecting tolls, problems associated with agency inexperience negotiating and managing business arrangements with the private sector, and equity concerns. If the state or local agencies shift too far from pay-as-you-go finance to debt financing, the excessive reliance on debt-based finance can also bring added costs and reduced administrative flexibility.

The next two subsections of this section assess the benefits and drawbacks of several types of facility-based revenue sources: fully tolled roads or tolled lanes adjacent to a free facility, and truck-only toll lanes. Following is a discussion about two options for bringing the private sector into partnership with government to improve the transportation system. There are dozens of possible arrangements by which this can be done, but this report looks

at just two examples: using public-private partnerships to build and operate tolled roads and lanes, and partnering with the private sector to build and maintain highway rest areas.

## TOLLED ROAD FACILITIES: HOT LANES, EXPRESS LANES, AND FULLY TOLLED HIGHWAYS

### Description

Tolls are one of the oldest mechanisms in the world for financing road systems, though they are relatively rare in California. But interest in toll roads in California is growing. A new law signed in May 2006 (AB 1467) authorizes regional transportation planning agencies to propose new high occupancy/toll (HOT) lane facilities, and authorizes the California Transportation Commission to develop formal proposals for four of these across the state (two in Northern California and two in Southern California). Ultimate approval of these facilities will be given later by the state legislature. (The law also authorizes private concession agreements to finance, build, and operate new truck-only toll lanes, which are discussed in a later part of this section).

There are already proposals for a number of new toll-financed megaprojects under consideration. According to Poole and Samuel (2006), these include a 5-mile tunnel to complete I-710 in South Pasadena, a new tunnel/surface route stretching more than 20 miles between Glendale and Palmdale, and a 14-mile tunnel linking the Foothill/Eastern Toll Road in Orange County to I-15 in Riverside County.

Tolled highway facilities can take many forms, with several variants currently of interest in the United States:

- **Fully vs. partially tolled facilities.** Most toll facilities charge for use of all travel lanes. But it is common among newer projects to keep some lanes free for all drivers, while other lanes are tolled. Drivers thus have the choice of taking either the tolled express lanes—which are usually less congested—or the free lanes. Depending on whether or not carpools also pay the toll, these systems are known as:
  - Value priced lanes: All drivers using the express lane pay the toll, or
  - High-occupancy/toll (HOT) lanes: Transit vehicles travel free, carpools pay either no toll or a reduced toll, and other vehicles pay a full toll.
- **Tolling for revenue vs. management.** Traditionally, the main objective of charging tolls was to generate revenue. Increasingly, however, tolls are being used as a strategy to

improve transportation system efficiency. Tolls can be set at a flat rate, or they can vary by time of day or congestion level. Interest is growing internationally in using the latter system to manage traffic congestion. The concept behind so-called *variable pricing* (also known as congestion pricing or value pricing) is to adjust the toll rate throughout the day so that it is always just high enough to keep the lane from becoming congested. During peak travel hours the tolls are comparatively high, and during off-peak times the tolls are relatively low. Toll rates are actively managed to ensure that at all times the facility remains congestion free.

- **Tolling for capital vs. surplus.** There are also a variety of approaches to spending toll revenue. In new facilities, toll revenues are typically committed to repaying the bonds or private investors that financed the initial capital investment. Examples include State Route 91 (SR-91) in Orange County and State Route 125 (SR-125) in San Diego County.

  In addition, existing toll facilities that have already paid back their construction costs can generate surplus revenue that can be used to maintain the facility, to subsidize other parts of the transportation system, or even for other non-transportation needs. There is growing interest in negotiating public-private concession agreements in which private investors take over management and toll collection of existing facilities, in exchange for lump-sum payments or longer-term revenue sharing arrangements, with the revenues dedicated for purposes other than the original construction of the facility. In 2005, the Chicago Skyway was leased to a private consortium for 99 years for an up-front payment of $1.8 billion. In 2006, the adjoining Indiana Toll Road fetched $3.8 billion in a 75-year operation agreement. Many states are now examining the potential for similar deals. In California, the consortium building SR-125 has proposed a different arrangement: in exchange for a ten-year extension of its concession contract, it will build a new, untolled HOV lane on nearby I-805 (Poole and Samuel, 2006).

  Surplus transportation revenue can also be generated by converting existing, free facilities into revenue generating ones by imposing tolls. This has long been considered so unpopular that it would not be politically feasible; for example, virtually every stakeholder interviewed for this report said that adding tolls to existing roads would be impossible. But there has been emerging interest in other states: North Carolina and Virginia are jointly proposing tolls on I-95 at their state border (Associated Press, 2006), and South Carolina is requesting permission to toll the entire length of I-95 through its state (Cole, 2006).

Many combinations and variants of the above strategies are possible. The remainder of this section emphasizes tolling strategies that directly help finance capital investments in new or upgraded facilities, since this options is presently of greatest interest in California.

## Revenue Generation

It is difficult to predict how much revenue could be generated by building additional tolled highways or highway lanes throughout California. Not only would it be speculative to guess how many new lanes or highways might be built as toll facilities in the state, but there is also substantial uncertainty about how much traffic would use the roads and what the toll rates might be. For all these reasons, one cannot estimate with even rough precision the likely the toll revenue generated statewide from new facilities.

Predicting the revenues from even just one future toll facility is an inexact science, especially in the short run. Some toll facilities, such as the SR-91 HOT lanes, have met or exceeded projected traffic and revenue levels in just a few years.[10] On the other hand, other recent toll roads such as the Dulles Greenway, the Pocahontas Expressway, and one of the toll roads in Orange County generated early traffic levels far below projections, creating problems for the owners trying to repay the revenue bonds used to finance them. Inaccurate prediction of how many drivers will use a toll facility is a very common problem, as there is no reliable way to anticipate the share of drivers who will opt to use a tolled facility when free alternatives are available, nor can one predict the pace of economic growth along a new, tolled corridor in the near term. Over the longer term, forecasts have been more reliable, but near-term predictions are unreliable.

Nevertheless, individual toll roads in select locations have the potential to generate billions of dollars over their lifetimes. As noted in the section "The Current System of Transportation Funding in California," California's existing tolled bridges and highways currently raise over $550 million per year. Borrowing against expected tolls can allow the state to access capital to build expensive new facilities that it would otherwise be unable to pay for out of existing transportation tax and fee revenues. Also, some highly successful toll roads might even generate revenues beyond what is needed to pay for construction and operation of the facility. These revenues would then be available to the state for other transportation needs.

[10] The SR-91 toll lanes cost $126 million to construct. In the third year of operation (1998), the California Private Transportation Company generated enough toll revenue to cover all operating costs and debt service (Boarnet, DiMento, and Macey, 2002, 10).

Most likely, only a small number of new toll facilities will generate enough revenue to fully repay their capital costs. A 2002 study of the potential for using tolls to fund new roads in California pointed out that the only locations where roads are likely to generate substantial revenues are in congested corridors where there are few alternate routes, or in areas with anticipated major population growth (Boarnet, DiMento, and Macey, 2002, 12). Although California has many congested freeways, in some cases surface streets offer free, if slow, alternatives that many drivers might prefer to use. As for roads in developing suburban and exurban areas where there may not be many alternative routes, it will be especially hard to predict future revenues, since these will depend on future development patterns.

A final consideration when assessing the revenue potential from toll roads is the excess cost of building toll-funded roads. Toll roads can be more expensive to build and operate than traditional, gas-tax or sales-tax-funded free facilities. First, toll collection involves higher administrative costs and greater operational impacts on the transportation system than do motor fuel taxes. Second, if roads are financed with bonds backed by toll revenues, then the borrowing costs can be more expensive than they would be if backed by a more predictable source of revenues such as fuel tax revenues or state general funds. Given the past experiences of toll roads that failed to meet their revenue forecasts, the bond markets are increasingly aware of the uncertainties and risks involved. These risks translate into lower bond ratings and higher interest rates. Bonds backed by more reliable sources, such as statewide motor fuel taxes or tolls from an existing facility, generally command more favorable interest rates.

In sum, toll facilities have the potential to generate revenues to cover some or all of the costs of major new infrastructure projects, and to cover the costs of operating and maintaining them over time. It is possible that in a few cases the roads might even generate excess revenues that could then be used to finance improvements to nearby facilities, public transit, or other local needs. However, it is unlikely that tolls could become a predictable source of revenue at the statewide level in the near or medium term, and they are therefore unlikely to generate a core revenue stream that could provide a meaningful supplement to declining fuel tax revenues.

## Ease of Implementation

Fully tolled new roads will likely collect tolls using a combination of electronic toll collection (ETC) systems and old-fashioned toll booths (where drivers can pay with cash), or ETC alone. For HOT lanes and express lanes, all payment may come through an ETC.

In ETC systems, vehicles carry a small device called a transponder that is linked to the driver's toll account. When the vehicle enters a tolled facility, an overhead device identifies the transponder and deducts the appropriate toll from that account. Many toll roads throughout the United States have adopted ETC, and the technology works well. One benefit is that vehicles pass through ETC lanes more quickly than through lanes with manual toll collection. In the Bay Area, a 2003 report found that the ETC lanes on the seven state owned bridges allowed vehicle throughput rates around 1000 vehicles per hour, compared to 400 vehicles per hour in the lanes with manual toll collection (Traffic Technologies, Inc., 2003, 3). The administrative cost is in the range of 5¢ to 10¢ per transaction (Peters and Kramer, 2003; Smith, 2002).

To enforce electronically tolled lanes, cameras are used to record the license plate of any vehicle that passes under the toll collection point without a valid transponder. In the Bay Area, a 2003 report estimated that there was only a 1.3% violation rate on the bridge lanes that used ETC (Traffic Technologies, Inc., 2003, 2). In HOT lane systems, enforcement is slightly more difficult because it requires identifying vehicles without the number of passengers that qualifies as a carpool. Also, if the state wishes to create HOT or express lanes without physical barriers separating them from the free lanes, then enforcement will be technically challenging, since the lanes will not have a limited number of discrete entrances and exits where vehicles can be charged the toll.

## Transportation System Performance

Toll facilities offer opportunities to improve transportation system performance by making it possible to implement variable pricing as a traffic management technique. At the same time, new toll roads have the potential to increase overall levels of traffic and thus increase congestion elsewhere on the road network.

On the plus side, variably priced tolls can permanently eliminate recurring congestion on the facility, a benefit impossible to achieve through any other transportation planning or financing tool.[11] Even without variable pricing, flat tolls will somewhat reduce traffic on those lanes, compared to the traffic levels that would occur if the lanes were free; the tolls may, therefore, reduce congestion.

[11] In a growing metropolitan area with a healthy economy, locational and behavioral patterns will shift to take advantage of any new highway capacity that becomes available. As Downs (2004, 7-11) points out, pricing and queuing are the only practical ways to balance peak hour supply and demand in a major metropolitan area.

Reducing congestion has multiple benefits for the transportation system. Free-flowing lanes handle higher traffic volumes than congested ones. Reducing congestion also saves travelers time and allows them to more reliably predict their travel times. When freeway lanes are not congested, this smooths traffic flow and can reduce the likelihood of crashes. Finally, reducing congestion can reduce response times for emergency vehicles using the facility, an outcome that benefits communities along the corridor.

In some locations, new toll facilities might increase use of public transit and carpooling. One of the chief barriers to establishing good long-distance commuter bus services is highway congestion. If toll facilities are managed with variable pricing to guarantee congestion-free driving, then commuter bus or bus rapid transit systems can offer travelers more efficient service. In corridors without existing carpool lanes, building HOT lanes may encourage drivers to start carpooling, as happened after HOT lanes opened on State Route 91 (Sullivan, 2000, xxii).

These potential benefits must also be balanced against the possibility of undesirable effects on the transportation system. As with any new capacity increases, careful consideration should be given to whether the additional flow will overwhelm the capacity of downstream infrastructure. In addition, if tolled facilities reduce congestion and make long-distance travel speedier and more reliable, these benefits may increase overall miles of travel and spur development at the edges of urban regions. Both outcomes are likely to have substantial negative environmental impacts and to increase overall congestion levels in the region. These drawbacks must be weighed against the desirability of accommodating suburban and exurban development. Finally, in places where an all-ETC option is not feasible, manual toll collection systems can have significant safety, environmental, and operational impacts.

## Equity

Like all facility-based user fees, tolls distribute costs and benefits equitably according to the equity principle that users who benefit from a facility should be the people who pay for it. However, tolled facilities raise a range of equity concerns for many stakeholders. The most common is that lower-income drivers may be unable to afford the tolls, and that the facilities are therefore unfair. This issue has been raised repeatedly during planning of HOT lane projects (Weinstein and Sciara, forthcoming). A related concern affects any facility that requires a transponder to access it. Acquiring transponders may be difficult or impossible for lower-income people, who have neither access to a credit card or checking

account, nor the ability to make an up-front deposit to charge the account (Parkany, 2005). Finally, if fully tolled facilities exist in some locations but not others, some people may argue it is unfair that drivers working or living in some areas pay tolls to use a highway, when drivers in other locations do not.

Although opponents of tolling tend to emphasize that it is unfair to low-income drivers, some public opinion surveys show that lower-income people support tolls about as often as higher-income people. This is particularly true in the case of HOT lanes. The survey for this study found little difference in support for HOT lanes according to income (Appendix A, Table 39). A survey of the drivers using the HOT lanes on SR-91 showed similar results, with lower-income drivers almost as likely as higher-income drivers to say that they approved of the lanes (Sullivan, 2000). While these survey results don't refute the argument that tolls are regressive, they do demonstrate that lower-income people are willing to accept this inequity in exchange for the benefits that the facility provides, or maybe they like the certainty that they won't be paying through sales or fuel taxes for a facility they do not plan to use.

The equity issues raised by toll facilities must be assessed on a facility-by-facility basis. Depending on the exact nature of the project location and design, equity concerns may or may not prove enough of a concern to warrant rethinking a project. One of the key issues to consider is whether or not travelers in a corridor with a toll have alternative options, so that those who cannot pay the toll—or wish not to—can still travel. Both HOT lanes and express lanes offer a choice of free or tolled travel on a single facility, making them more likely to prove acceptable than fully tolled freeways. However, even for fully tolled roads, travelers may have other options, such as alternative roads or transit. To the extent that the new toll facility draws traffic away from the existing, free routes, then even the drivers choosing to remain on those free routes will benefit. Finally, equity concerns may diminish if the toll facility raises sufficient revenues, and they can be used to subsidize transit, ridesharing programs, or other transportation services.[12]

## Political Feasibility

Tolled roads do not have a strong presence in California, which increases the challenge of raising support for them. Though the United States has a long history of fully tolled highways and

[12] For a thorough discussion of equity issues related to HOT lanes, see Weinstein and Sciara, (forthcoming). Although the article addresses HOT lanes in particular, most of the analysis applies equally to express lanes or fully tolled highways.

bridges and extensive networks of turnpikes in states such as New York, New Jersey, Pennsylvania, Ohio, Illinois, Indiana, Oklahoma, and Florida, California has had few tolled facilities. For most of the twentieth century, California had just eight tolled bridges in the San Francisco Bay region, plus the Vincent Thomas and San Diego-Coronado bridges in southern California. Since the 1990s, a few new toll roads have appeared. The Transportation Corridor Agencies in Orange County built four toll roads (State Routes 73, 241, 261, and 133), HOT lanes were built in Orange County on SR-91, and in San Diego County a new toll road will open in 2007—the South Bay Expressway (SR-125 South).

The concept of highways with a combination of some free and some tolled lanes is very new. California opened the first two HOT lane projects in the world in the 1990s, SR-91 in Orange County and I-15 in San Diego County.[13] The variable pricing schemes used on these projects are also new to the public, and have raised some concerns and misunderstandings, such as the misconception that the toll rates are raised at peak hours merely to gouge drivers who have no option but to drive then. However, despite some challenges, HOT lanes seem relatively popular.

One of the surveys conducted for this research showed that converting underused carpool lanes to HOT lanes had clear majority support, with 56% of voters saying that they would support such a proposal and 41% indicating they would oppose it (see Appendix A, Table 39). When the results were broken down by different demographic categories, every population group showed a support level of at least 50%. The two existing HOT-lane projects in Southern California have high levels of support in their regions, with support levels strong across different demographic groups, and among both HOT-lane users and nonusers (Sullivan, 2000; Golob, 2001).

In addition to public support, HOT lanes have fairly strong stakeholder support. Many of the regional transportation planning organizations and county transportation authorities are actively pursuing them. In terms of interest groups, most environmental groups either tolerate or support HOV-to-HOT conversions, though building new lanes as HOT lanes elicits opposition from those environmentalists who oppose all road capacity expansion. The trucking industry, an opponent of many forms of tolling, has not taken a strong stand on HOT lanes and is unlikely to do so, as these lanes do not directly affect truckers. In some regions, the one major sticking point for HOT lanes has been equity concerns, which sometimes grow prominent.

[13] Houston also has a version of HOT lanes, and Minneapolis opened HOT lanes in 2005. Dozens of other HOT lane or express lane projects around the country are currently in the planning or implementation stages (Federal Highway Administration, Office of Highway Policy Studies 2006).

Fully tolled roads have less clear political support among both the public and stakeholders. When Californians were asked in the survey whether they support building new, fully tolled roads, 44% of voters said yes and 51% said no (see Appendix A, Appendix 42). Table 8 shows that support tended to be moderate rather than strong and that opponents were more likely to be strong than moderate opponents. In addition, women were more supportive than men. Respondents also indicated that they would be more likely to support toll roads if they knew the road would be built more quickly this way or if state officials said the tolls would be eliminated once the road was paid for (Appendix A, Table 43 and Table 44). A survey of Texas voters found similarly unenthusiastic results about toll roads, with 51% agreeing with the statement, "Drivers should not have to pay tolls for construction and use of new roads" (Kockelman et al., 2006).[14]

**Table 8 Support by Likely Voters for Building New Highways as Toll Roads**

| Respondent Category | Strong Support (%) | Moderate Support (%) | Moderate Opposition (%) | Strong Opposition (%) | Don't Know (%) |
|---|---|---|---|---|---|
| Statewide | 21 | 23 | 18 | 32 | 5 |
| North/South | | | | | |
| North | 15 | 23 | 22 | 34 | 6 |
| South | 26 | 23 | 16 | 31 | 5 |
| Region | | | | | |
| Bay Area | 13 | 25 | 26 | 34 | 3 |
| Los Angeles | 29 | 20 | 16 | 32 | 2 |
| Other Southern California | 27 | 24 | 14 | 29 | 7 |
| Central Valley | 22 | 22 | 19 | 29 | 9 |
| **Gender** | | | | | |
| **Men** | **19** | **19** | **18** | **40** | **3** |
| **Women** | **24** | **26** | **18** | **25** | **7** |
| Income | | | | | |
| Less than $50,000 | 21 | 24 | 18 | 28 | 10 |
| $50,000–$100,000 | 17 | 21 | 21 | 37 | 4 |
| Over $100,000 | 27 | 26 | 16 | 28 | 3 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at p<0.05. Differences among income groups were significant at p<0.07. See Appendix A for complete survey results.

Support for express lanes lies in the middle. Like HOT lanes, express lanes offer drivers choice, and thus draw less opposition from people who believe that toll roads are unfair.

[14] The wording of the survey question does not appear in the article, but was obtained from the authors. See the unpublished manuscript "Public Perceptions of Toll Roads: Phone Survey, 2006," by Kaethe Podgorski and Kara Kockelman.

The first survey found that only 40% of likely voters supported the express lane concept, while 56% opposed it (Appendix A, Table 38). The second survey found 47% support and 48% opposition (Appendix A, Table 47). Support may have been higher in the second survey because the question was asked in the context of a series of questions about toll lanes, and this may have increased respondents' interest in the topic.

A final caveat is that support for tolled facilities may be very different when people are asked about tolls in general versus their support for a particular project. On the one hand, people who generally oppose tolls might support a particular toll road that eased congestion in a corridor they often travel. Conversely, people who support tolls in general may oppose a particular project once they know more precisely the tolls that they personally would pay.

## TRUCK-ONLY TOLL LANES

### Description

Truck-only toll (TOT) lanes are highway lanes reserved for the exclusive use of heavy vehicles such as heavy trucks and buses, sometimes with dedicated access ramps to help trucks avoid crossing through regular highway lanes. Heavy-vehicle use of TOT lanes can be compulsory or voluntary. Pricing may consist of tolls that vary (by time of day or amount of network congestion), fixed tolls, or tolls based on vehicle weight or travel distance. TOT lanes can be designed to accommodate longer combination vehicles (LCVs), which California currently does not permit on interstate or state routes, but which trucking companies like to use because they reduce the cost of moving goods.

While the United States does not currently have any true TOT lanes, the Ohio Turnpike and the Indiana Toll Road function similarly to a TOT facility. Both roads earn the bulk of their revenues from truck tolls, and attract truck users from parallel free roads by allowing for increased travel speed, truck-oriented facilities such as special staging areas to increase truck loads, and the ability to travel with greater sizes and weights (Samuel et al., 2002). Additionally, several short-distance facilities operate near shipping ports in Boston, New Orleans, New Jersey, and Texas (Reich, 2002). Proposals for TOT lanes have been made in California, Virginia, Georgia, and Texas (Samuel et al., 2002).

## Revenue Generation

Similar to the discussion of toll roads, above, it is very difficult to predict how much revenue could be generated from TOT facilities. However, various preliminary studies have shown that in locations where there is substantial truck traffic, TOT lanes have the potential to raise significant revenues and perhaps even to be self-financing. One study, by the Reason Public Policy Institute (Samuel et al., 2002), found that TOT lanes are financially feasible primarily on intercity corridors with high levels of congestion. The study used a sketch model to estimate likely revenue potential and found that, in these locations, TOT lanes could generate enough revenues to cover their costs. Some intercity routes might even generate modest excess revenues. Another study, by the Southern California Association of Governments (Southern California Association of Governments, 2004, 3), assessed the financial feasibility of building a 142-mile network of self-financing TOT lanes. The preliminary analysis found that a moderate toll of 56¢ per mile would generate enough revenue to cover the $16.5 billion capital costs of the project, as well as operations and maintenance. In Atlanta, Georgia, the local tollway authority studied three scenarios of TOT lane networks to be managed with variable pricing and concluded that the net revenue generated from the network would be from $73 million to $157 million annually, after deducting operating costs (Georgia State Road and Tollway Authority, 2004).

## Ease of Implementation

The technology used in the implementation of TOT lanes involves the same electronic toll collection discussed above. One likely difference between all-purpose toll lanes and TOT lanes is that if the TOT lanes serve many out-of-state trucks, then fewer users will be routine customers, and therefore a lower share will likely register to use an electronic toll collection device. In addition, if LCVs were allowed, the state would have to assess the impact of having these trucks on the rest of the road network to decide where they would be permitted.

Like all toll lanes, TOT lanes are expensive to operate, thus reducing the net revenues they generate. For example, the Atlanta study's estimated cost to administer the lanes came to about 10% of estimated revenues (Georgia State Road and Tollway Authority, 2004).[15]

[15] Administration costs were estimated as a percentage of revenues using data from Tables 13 and 14 in the Georgia study.

## Transportation System Performance

Removing truck traffic from mixed-flow travel lanes on highways could generate several important improvements in transportation system performance that would benefit the trucking industry and other highway travelers alike. In addition, TOT lanes may reduce the maintenance needs on the adjacent mixed-use lanes.

First, TOT lanes contribute important safety and congestion-relief benefits when trucks are separated from light-duty vehicles. A fairly high number of truck-related crashes occur between light duty vehicles and trucks, with the light-duty vehicles often at fault. Furthermore, reducing accidents also reduces incident-related traffic congestion for trucks, as well as light-duty vehicles. A study from 1990 estimated that truck crashes, because of their severity, account for approximately 20% of all delay resulting from vehicle incidents and crashes (Grenzeback, 1990). A study of a proposed TOT network in the Atlanta, Georgia, region compared the congestion impacts of a proposed HOV network with a TOT network. The authors found that a TOT network would reduce congestion more than an HOV network because more homogeneous traffic would improve traffic flows (Georgia State Road and Tollway Authority, 2005).[16]

Moving trucks onto truck-only toll lanes can also reduce overall road maintenance costs. Heavy vehicles cause exponentially more pavement damage than light-duty ones (Federal Highway Administration, 1997, Table 3). Separating trucks from passenger vehicles would minimize maintenance needs for mixed-flow lanes (Samuel et al., 2002), saving both money and maintenance-induced congestion.

Finally, truck-only toll lanes could provide the trucking industry with a reliable, uncongested travel option. In certain corridors, this could greatly reduce trucking costs by reducing the time and labor needed for deliveries. And when firms can count on reliable truck deliveries, they are able to reduce inventory costs by adopting business models that rely on just-in-time deliveries. However, if many businesses shift to smaller and more frequent deliveries, rising truck traffic can impose a burden on local streets and roads, so it is important that management strategies consider the entire transportation system.

[16] The same safety and efficiency benefits can be achieved by other approaches to separating traffic. An alternative approach is a "dual-dual" facility, such as the New Jersey Turnpike, which provides exclusive lanes for automobiles, as well as for mixed auto/truck/bus lanes (Fitzpatrick, Brewer, and Venglar 2003).

## Equity

Truck-only toll lanes fare very well under some equity criteria, but have also been opposed on equity grounds by the trucking industry. On the one hand, they are an ideal user fee, since only trucks using the highway pay a toll, the essence of the "benefit" definition of equity. In addition, since trucks do more damage to roadways than lighter vehicles, the truck tolls can be set high enough to recoup the cost of building the pavement to higher standards and for the added maintenance needed—the essence of the cost-based definition of equity.

The trucking industry, however, does not tend to share this view that truck-only toll lanes are equitable. The industry has argued that it is double taxation to require truckers to pay tolls in addition to state and federal fuel taxes. This argument is not specific to TOT lanes, however—it could be made in response to any toll facility. It also implies that the fuel taxes paid by drivers (of trucks or other vehicles alike) are sufficient to cover the cost of providing and maintaining highways, which is patently not the case. However, if it were generally agreed that truck-only tolls impose an inequitable form of double-taxation, then one option to solve the problem would be to refund the diesel fuel taxes truckers pay for fuel used to travel on TOT lanes. In addition, if truck-only toll lanes were voluntary rather than mandatory, this would reduce the trucking industry's equity concerns.

## Political Feasibility

TOT lanes were quite popular with the Californians polled for this study, but the trucking industry has often been opposed to the concept. The latter's position may be changing, however.

In markets where congestion and reliability are particularly problematic, businesses reliant on an efficient delivery system could become advocates for such a proposal. In addition, surveys of public opinion have shown that people like the idea of TOT lanes. The survey of Californians found that 62% of respondents favored building new TOT lanes next to congested freeways, and requiring trucks to use them, with only 33% opposing the idea. As Table 9 shows, support was over 50% among every demographic group, rising to a high of 83% among Hispanics. In Texas, a survey of over 2000 Texans found strong support for two concepts related to TOT lanes: 1) that on toll roads, higher toll rates are appropriate for larger, heavier, or higher emission vehicles (73%), and 2) that dedicated heavy vehicle lanes should be added to highways (83%) (Kockelman et al., 2006).

While the public may be supportive of separating trucks from general highway traffic, trucking associations have historically disliked toll lanes as a general principle. The American Trucking Association (ATA) opposes tolls on the existing interstate highway system because of the double-taxation argument mentioned above (American Trucking Association, 2006). The trucking lobby has historically been powerful at both the state and federal level, so their opposition could prove fatal to any proposal.

However, the trucking industry has indicated that it might support at least voluntary TOT lanes. The ATA supports the use of tolls to fund new capacity, provided the new TOT lanes are voluntary (American Trucking Association, 2006). In addition, the trucking industry consists of diverse members with widely different interests, and it is possible that subsets of the industry may be more enthusiastic about TOT lanes, especially if these are voluntary and are guaranteed to be congestion free.

One possible way to minimize opposition from trucking associations would be to refund the state fuel taxes paid for travel on the TOT lanes. The Massachusetts Turnpike and the New York Thruway have already instituted such rebate programs, using company-specific mileage records of travel on the toll roads to determine the appropriate rebate (Samuel et al., 2002). However, if one goal of TOT lanes is to raise the overall level of transportation revenues available to the state, then such rebate programs would be counterproductive.

In California, there has been some political effort to facilitate TOT lanes, including a 2006 law (AB 1467) that authorized the state to enter into private concession agreements for their financing, construction, and operation.

**Table 9 Support by Likely Voters for Truck-Only Toll Lanes**

| Respondent Category | Support (%) | Oppose (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 62 | 33 | 5 |
| North/South | | | |
| North | 59 | 34 | 7 |
| South | 65 | 32 | 4 |
| Region | | | |
| Bay Area | 63 | 30 | 7 |
| Los Angeles | 67 | 29 | 3 |
| Other Southern California | 64 | 33 | 3 |
| Central Valley | 53 | 43 | 4 |
| **Gender** | | | |
| **Men** | **56** | **40** | **4** |
| **Women** | **68** | **26** | **4** |
| **Ethnicity** | | | |
| **White** | **58** | **37** | **5** |
| **Hispanic** | **83** | **14** | **2** |
| **Age** | | | |
| **18–34 years** | **71** | **29** | **0** |
| **35–54 years** | **60** | **35** | **5** |
| **55+ years** | **60** | **31** | **8** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$. See Appendix A for complete survey results.

## PRIVATE INVESTMENT THROUGH PUBLIC-PRIVATE PARTNERSHIPS

### Description

Although new toll facilities can be built as publicly owned and managed infrastructure, the state can also allow the private sector to develop and operate toll facilities. Under these so-called public-private partnerships (PPPs), the state government and a private firm or consortium negotiate a contract that specifies what infrastructure and services the firm will provide in exchange for the right to collect certain levels of tolls or other revenues. PPPs can provide California with access to a greater flexibility in project finance for two reasons. First, private investors may be willing to invest more than public agencies and accept greater risk for a chance at greater potential profitability. Second, it often turns out to be easier for an agency to negotiate a long-term schedule of toll increases through a binding contract than it would be for the same agency to implement the same schedule of toll

increases itself, in real time. Removing political will and political risk from the equation allows more aggressive toll increase schedules, and therefore greater access to initial capital.

PPP toll roads can operate as either *real-toll* or *shadow-toll* agreements. In a real-toll agreement, the private partner finances, builds, operates, and maintains the toll facility in exchange for the right to retain all tolls paid by drivers. Many contracts try to keep tolls low by limiting the private partner's profits to a percentage of costs, or otherwise cap allowable toll rates. Shadow-toll agreements differ in that the private partner does not retain the tolls paid by motorists. Instead, the government retains the toll revenue, and compensates the private partner based on the number of vehicles using the road, or by some other criteria related to road usage or performance. Although real-toll projects are more common, shadow-toll projects exist in various countries including Britain, Spain, and Portugal (Federal Highway Administration, 2006b).

Another form of partnership that has recently drawn attention is the leasing of existing assets to a private firm in exchange for a lump-sum payment. In 2005, the City of Chicago entered into a 99-year agreement to lease the Chicago Skyway to a private firm in exchange for a payment of $1.8 billion. Indiana has entered into a similar agreement for a 75-year, $3.85 billion lease of the 157-mile Indiana Toll Road. Similar arrangements have been proposed in New York, New Jersey, and several other states. Such leasing agreements are attractive because they enable governments to ensure that future toll increases occur more regularly than might otherwise be politically feasible, and to capture a portion of those future revenue streams for immediate investment in other facilities or programs. Whether or not such arrangements provide a good deal to the public over the long run remains a matter for debate.

The United States has a long history of privately owned or operated toll roads. Many of the earliest highways in the nation's history were private toll roads. More recent examples include the Dulles Greenway outside of Washington DC; the Express Lanes on SR-91 in Orange County, California;[17] and SR-125, currently under construction in San Diego County, California. There are also various proposed PPP toll roads around the country in various stages of planning, including two HOT lanes in Virginia, the Trans-Texas Corridor, and a highway in Colorado that would connect Pueblo, Colorado, with the Wyoming border.

[17] These were originally built by a private firm, though the Orange County Transportation Authority purchased them in 2003.

It is impossible to draw firm conclusions about the desirability of PPP toll roads in general, as every PPP project will have different outcomes depending on the details of the contract negotiated and location of the project. However, the following sections highlight certain themes likely to arise with PPPs.

In May 2006, a new California law (AB 1467) authorized the state to enter into up to four private concession agreements (two in Northern California and two in Southern California) to finance, build, and operate new projects whose primary purpose is to improve goods movement. The projects may include truck-only toll lanes, rail access, or other improvements, but may not charge tolls to noncommercial vehicles. The legislation allows regional transportation planning agencies to solicit proposals for specific projects, or to accept unsolicited proposals from private investors.

One such project under consideration is a truck-only managed lane and toll facility that would stretch from the Ports of Los Angeles and Long Beach to the Nevada border via I-710, SR-60, and I-15 (Poole and Samuel, 2006).

## Revenue Generation

Like public bond-financed toll roads, PPP toll roads can generate money to fund the construction of expensive highway projects that might otherwise not be built. The SR-91 HOT lanes in Orange County cost $126 million to construct, money originally invested by the private company that built the lanes (the county later purchased the lanes from the company). In San Diego County, a private consortium and local developers are investing over $700 million to build the ten-mile South Bay Expressway (SR-125).

So far, private investment in toll roads represents only a tiny fraction of current national spending on highway construction. One estimate is that the six major PPP transportation facilities built in the United States over the last two decades represent an infusion of about $2.2 billion in private capital, compared to $66 billion spent by states in just the single year of 2001 (Gordon, 2006, 9) Even if the state were to increase the opportunities for private firms to build toll roads, there would only be a limited number of projects that would appeal to the private sector on the basis of market demand for a premium transportation facility.

A final issue for the state to consider is that PPPs could either raise or lower the cost of building the road—savings or excess costs that would be passed on to drivers. PPPs could reduce project costs (and motorists' tolls) if the private sector were able to build the project more cheaply than the government by using more flexible construction and administrative

methods. On the other hand, the private sector often pays much higher interest costs for borrowing money than the state. Thus, PPP toll roads might cost more to build than their private equivalents, costs passed on to drivers through higher toll rates.

## Ease of Implementation

Partnerships with the private sector would not be cost-free to the state. Negotiating, implementing, and managing PPPs can be extremely complex and requires staff with a level of expertise not available in many public transportation agency departments. Thus, while transportation agencies may save money as the private sector takes over their core competencies (designing, building, and operating transportation facilities), they may incur substantial additional expenses hiring their own on-staff experts or consultants to represent them (Peters and Perrotta, 2006). This expertise is required both to negotiate the final contracts, and later to assess whether the private partner complies with the terms throughout the life of the contract. Essentially, new forms of legal and management expertise need to be developed in order to replace the engineering or operations expertise that is contracted out.

## Transportation System Performance

PPP toll roads can have significant impacts on the performance of the transportation system, both positive and negative.

The potential benefits are impressive. For example, contracts can be structured to require high-quality maintenance of the road, improving driving conditions for motorists. While in theory the public sector could provide equally high levels of maintenance, agencies have traditionally responded to budgetary pressures by lowering maintenance standards when money is tight. In addition, private firms are better able than government to introduce innovative strategies and technologies into their management of the system, such as making it easier or more convenient to pay the tolls. In general, if a PPP contract provides the proper incentives, private firms may also respond more quickly or flexibly to managing unexpected problems. In sum, all of these factors could allow PPPs to provide better, more reliable service for motorists.

On the other hand, PPPs raise serious concerns for long-term system performance of both the tolled road itself and the larger transportation system. The fundamental conflict is that the private operator's objective to maximize profits may not align with public interests such as maximizing motorist safety and regional highway performance, or reducing air

pollution and other environmental impacts of the transportation system. The problem of non-aligning public and private objectives was highlighted by the SR-91 HOT lanes in Orange County. The legal agreement between the state and private operator included a noncompete clause, limiting Caltrans' options to expand capacity on nearby or competing road facilities because such improvements would likely reduce toll revenues on SR-91. County leaders decided that highway improvements violating the non-compete clause were imperative, and ended up buying the facility back from the private operator using bonds backed by toll revenues. Today, private concession agreements generally do not contain non-compete clauses that restrictive.

It is possible to structure the PPP agreements to align private and public sector interests, but this requires substantial effort and expertise that public agencies in the U.S. are only beginning to acquire. Nevertheless, as more PPPs go into operation, state officials will learn useful lessons about how better to implement these. Structuring partnerships with shadow tolling rather than real tolling has potential to help considerably in this area, since the public sector usually retains more control over the toll rates and policies, as well as the freedom to improve adjacent roads (DeCorla-Souza and Barker, 2005).

## Equity

The equity implications of PPP toll roads are very similar to those arising from public toll facilities. One variation, however, is that the public sector will potentially have less flexibility to adjust the tolling scheme to manage equity concerns, should these arise. Another issue is the intergenerational equity implications of very long contract periods. The terms of a 99-year lease may seem like a good deal for the public when first negotiated, but it is likely that the policy objectives of the negotiators and those of the public will diverge over time, especially after a generation or two. The Chicago Skyway contract attempted to address this problem by including a mechanism for the terms of the contract to be renegotiated and adjusted over time, but the success of this approach remains to be seen.

## Political Feasibility

Conventional wisdom holds that public suspicion of PPP toll roads has the potential to block future new projects. The root of at least part of the opposition may simply be dislike of any toll road, regardless of whether it is public or private. However, privatization may bring up other concerns. Some people may feel that it is unfair for the private sector to

make a profit off of basic infrastructure, such as a highway. However, the United States has a strong history of allowing privately owned firms to provide basic necessities, such as gas, electricity, water, transit, and phone services. This demonstrates precedent for tolerating private profits made from providing basic infrastructure like toll roads.

The public may also worry that the private sector will set tolls unreasonably high or block improvements to nearby road facilities. In Southern California, some residents are aware of the problems that developed when Orange County wanted to make highway improvements that violated the SR-91 HOT lane franchise agreement, and the public may be wary of similar problems arising with new PPPs. Although it is possible to structure the contracts governing PPPs to minimize the risk of these problems, or to use shadow tolls so that the government retains control of the toll rates motorists pay, communicating the subtleties of such contracts to the public may be difficult or impossible.

Despite these potential concerns from the public, California already has constructed two PPP toll facilities (SR-91, now in operation, and SR-125, which will open soon), demonstrating that public opinion is certainly not an insurmountable barrier. In addition, this report's survey found that few people adamantly opposed PPP toll roads, and a large majority would at least tolerate them. Respondents were first asked if they would prefer to have a public or private toll road. Responses were about evenly split: 48% preferred public and 46% private (see Appendix A, Table 49). A follow-up question, which probed for direct opposition to private toll roads, found that only 11% of likely voters were definitely opposed (see Appendix A, Table 50); 79% said they would support or at least not oppose private toll roads. These survey results closely mirror those from the Texas study mentioned earlier; when respondents were asked if they preferred public or public/private management of toll roads, 46% preferred the PPP and 45% the public alone (Podgorski and Kockelman, 2005, 16).

Although these surveys suggest public acceptance of PPP toll roads, it may be that more people would object when confronted with a specific project rather than when asked to evaluate the theoretical concept.

Finally, unions are potential opponents of PPPs. For example, California's public sector engineering unions have objected to past proposals to allow Caltrans to issue design-build contracts. With respect to the type of PPP described in this section, unions have expressed concern that PPPs may become vehicles for circumventing state laws that ensure fair wage rates or the use of union labor. However, if California passes legislation requiring PPP to follow all labor laws that relate to publicly constructed and managed transportation

projects, this might ease union opposition. Other states have followed this practice successfully.

## REST AREA PRIVATIZATION

### Description

Facility-based finance strategies can also be used to improve the quality of services offered by transportation facilities. In an effort to reduce the public cost of operating existing rest areas and to meet the need for new rest areas, Caltrans has investigated the possibility of entering into partnerships with private companies for rest area operation and development. Existing rest area operations could be taken over by private companies in exchange for the right to develop commercial businesses at rest areas.

Roadside rest areas are a key feature of the state and federal highway system. As currently designed on public highways, rest areas improve safety and convenience by providing both passenger car and commercial truck drivers a place to stop without leaving the highway system. The traditional rest area in California includes parking, restrooms, telephones, and vending machines. In some other regions of the county, such as along the I-95 corridor in the Mid-Atlantic states, rest areas are large commercial centers that include service stations, fast food and full-service restaurants, video game arcades, and souvenir stands. Privately developed rest stops along major trucking routes often include facilities for truckers to sleep and shower.

In the 1950s and 1960s, during early development of the interstate highway system, state and federal fuel tax receipts were sufficient to fund the maintenance of existing facilities and provide for system expansion through new construction, including the maintenance and development of new rest areas. However, with the rapid growth in vehicle miles traveled and only limited growth in revenues from gas taxes, funding for the development of public rest areas has become a lower priority (Kress and Dornbusch, 1991, 1).

### Revenue Generation

The potential revenue gains from privatizing rest areas are small in comparison to the state's annual expenditures on highways, but could be stable and predictable.

The total revenue potential from rest area privatizing depends on many factors, such as the number of existing rest areas privatized and new ones built, as well as the size of permitted

businesses. However, two existing studies present some estimates of likely revenue potential. In 2004, the California Performance Review estimated that if all of California's existing 88 rest stops were privatized, the state would save $10 million per year. That estimate assumes the state would save the $12 million it currently spends each year to operate rest areas, but would have to spend $2 million annually overseeing the privatization program (California Performance Review Commission, 2004).

If a private firm were willing to develop new rest areas, this would save the state the capital costs of these projects. A 1991 study (Kress and Dornbusch, 1991) estimated that lease payments from each new rest area could be about $9 million over 35 years, or $257,000 annually. (In 2005 dollars these figures translate to $12.9 million in revenue over 35 years, or $717,000 annually.) However, the study assumed that Caltrans would contribute the land for development and $500,000 up-front funding, factors that would offset at least part of the revenue received from the lease.

## Ease of Implementation

If the state were to privatize rest areas, Caltrans would need to assign personnel to negotiate and manage the contracts, or else hire consultants to do this work. An added barrier is that state and federal laws would need to be changed in order to allow Caltrans to privatize rest areas. Existing state statutes do not allow Caltrans to privatize or commercialize existing rest areas (California Department of Transportation, 2005a, ch. 29, 42). The sale or merchandising of food, goods, or services is prohibited, except regulated newspaper vending, public telephones, commercial advertising, and vending machines operated by the blind under the California Department of Rehabilitation, Business Enterprise Program (California Code of Regulations, Title 21, Chapter 20). In addition, current federal regulations prohibit commercial development on highways that were funded with any federal monies (California Performance Review, 2004). Federal regulations prohibiting commercial development on highways funded with federal monies are specifically designed to prevent competition with existing private entrepreneurs directly accessible from the interstate (National Transportation Safety Board, Highway Special Investigation Report, Truck Parking Areas, 2000, 18).

## Transportation System Performance

Privatized rest areas would provide travelers with a broader range of services than currently offered. In addition, if new rest areas were developed, this would increase the number of

parking spaces for commercial truckers and, as a result, improve system safety. Commercial truckers are required to stop driving and rest for periods of time after a number of hours of driving. Currently, the system has too few rest area parking spaces to accommodate all commercial vehicles. As a result, truckers are forced to park in unsafe locations, such as road shoulders, which creates a system safety problem. If new privatized rest areas were to add parking spaces, this would address the current shortage. A survey designed to rank the effectiveness of alternative strategies to provide adequate commercial vehicle parking demand found that the most effective policy would be to "encourage the development of public-private partnerships" (National Cooperative Highway Research Program, 2003, Chapter 4, 15).

## Equity

As currently structured, the facilities at California rest stops are free to the public. As long as parking, restrooms, phones, and vending machines continue to be offered to the general public without charge, the privatization of rest areas presents no equity issues for travelers.

Equity issues could arise out of competition between businesses that are allowed to be part of a newly commercialized rest area and those existing businesses located near the highway whose rely on business from highway travelers.

## Political Feasibility

Privatized rest areas have strong support from the public as well as state highway departments nationally. The survey for this report showed that 71% of likely California voters would support privatizing rest stops (see Appendix A, Table 52). At the national level, the American Association of State Highway and Transportation Officials (AASHTO) has advocated for right-of-way privatization to counterbalance increasingly limited state transportation budgets. In a 2004 report, AASHTO stated that, "The states would overwhelmingly like to expand their services and offer customers restaurant and fuel facilities to complement the rest rooms and parking areas already in use" (American Association of State Highway and Transportation Officials, 2004, 7).

Despite these sources of support, significant political challenges remain. For example, at least two stakeholder groups would likely oppose the privatized rest areas in California. First, local business and community leaders may oppose privatized rest areas on the grounds that new commercial facilities at rest areas will directly compete with existing local businesses. In smaller towns that depend heavily on highway travelers to support

local businesses, this opposition is likely to be high. The second potential source of opposition is the California Department of Rehabilitation. When Caltrans previously tried to initiate a program to privatize rest areas, this government department objected that this would interfere with its program allowing blind entrepreneurs to provide vending machines at rest areas (California Performance Review Commission, 2004).

## SUMMARY

California has many promising and politically feasible options to develop facility-based transportation revenue sources. In particular, many types of toll roads can be developed to meet local needs, from truck-only toll roads in corridors with heavy freight traffic, to HOT lanes or express lanes in congested corridors where some drivers will be willing to pay a toll in exchange for paying tolls. Fully tolled highways are likely to be less popular, but the Orange County toll roads show that even fully tolled roads have a future in California. Finally, privatized rest areas show great promise to improve the services offered to motorists, though privatization also faces steep political challenges. Table 10 summarizes the key advantages and disadvantages of the revenue and finance options discussed in the section.

In terms of potential revenue generation, facility-based revenue and finance tools cannot generate a predictable revenue stream at the state level that can counterbalance falling fuel tax revenues. However, toll facilities can complement the statewide taxes and fees appropriate to generating a core revenue stream for transportation. In some congested corridors, toll facilities can provide sufficient revenue to cover the facility's construction and operations costs and generate some surplus that can be directed for other purposes.

When transportation facilities generate revenue directly from users, it is possible to develop public-private partnerships, where private firms build and/or operate transportation facilities in exchange for the right to user payments. Both toll roads and privatized rest areas are candidates for this type of partnership. PPPs have the potential to improve the service quality of the facilities compared to publicly owned and managed ones, and private firms might have access to capital markets that governments do not.

## Table 10 Key Advantages and Disadvantages of Facility-Based Revenue and Finance Options

| Facility Option | Key Advantages | Key Disadvantages |
|---|---|---|
| Fully Tolled Roads | • Generate revenue to help pay part or all of the facility's construction and operation costs<br>• Can provide a congestion-free trip, if variably priced<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Unpredictable revenues<br>• Regressive<br>• Low voter support |
| Express Lanes | • Generate revenue to help pay part or all of the facility's construction and operation costs<br>• Can reduce congestion on both the tolled and free lanes, especially if variably priced<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Generate less revenue than fully tolled roads |
| HOT Lanes | • Encourage transit and carpooling<br>• Provide a congestion-free alternative<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received)<br>• Good voter support, relative to other taxes and fees | • Generate the least revenue of the toll facilities discussed<br>• Enforcement can be difficult |
| Truck-Only Toll Lanes | • Reduce accidents between heavy trucks and light-duty vehicles<br>• Increase speed and reliability for deliveries<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received)<br>• Very good voter support, relative to other taxes and fees | • Likely opposition from trucking industry, unless the lanes are voluntary |
| PPP Toll Facilities | • May generate capital funds the state cannot otherwise access<br>• Increased innovation and flexibility in design, construction, and management of the facility (can reduce costs and improve service quality) | • May increase construction costs if private sector pays higher interest rates than the public sector<br>• Reduced public sector freedom to change rates and usage policies |
| Privatized Rest Areas | • Provide drivers with new amenities<br>• Improve safety by adding truck rest areas<br>• Very popular with the public | • Very low revenue generation<br>• Strong opposition from business owners and local governments in the area likely |

# GOVERNMENT TAXES AND FEES

## INTRODUCTION

This section evaluates several options to fund transportation infrastructure through state government taxes and fees. The options include fuel taxes, mileage-based fees, registration fees, vehicle license fees, weight-mile fees, sales taxes, and general revenues from income taxes and other sources. Also examined are general obligation bonds that can be used to generate funds in the near term, and that can be paid from income taxes and other general revenue sources over the long term.

## USER FEE OPTIONS

### Fuel Taxes

#### *Description*

Fuel taxes have traditionally been the primary source of funding for highway infrastructure, as described in the section "The Current System of Transportation Funding in California." They are traditionally considered user fees because revenues are devoted to the transportation system and users of the system pay the tax through fuel purchases. However, most states, including California, have not raised these taxes enough to keep up with inflation or travel demand. There are a variety of ways that fuel taxes could be increased from the current state fuel tax of 18¢ per gallon on both gasoline and diesel fuel. The state legislature could increase the state motor fuel tax by a set amount ($x$¢ per gallon) all at once or increase it by a fixed schedule over time. Alternatively, the legislature could tie the motor fuel tax rate to inflation (known as indexing). It could do this by passing a law that would increase the fuel tax rate automatically each year based on the increase in the previous year's consumer price index. Some states have combined the options, with portions of tax set at a fixed rate and others that vary based on an index, a percentage of the price of fuel, or revenue needs (Ang-Olsen, Wachs, and Taylor, 2000). Finally, the legislature could enact a new tax, like the sales tax on motor fuel, that would directly tax the value of motor fuel sales rather than their volume.

For the purposes of this study, three proposals were examined:

- Increasing the motor fuel tax by 6¢ per gallon in 2007
- Increasing the motor fuel tax by 1¢ per gallon per year, for ten years, between 2007 and 2016
- Increasing the motor fuel tax in 2007 and every year thereafter to maintain the tax rate at its inflation-adjusted 2006 levels (indexing)

### *Revenue Generation*

Increasing fuel taxes could be one of the highest revenue-generating options of those considered in this analysis. Raising the motor fuel tax by 6¢ per gallon would generate $1.07 to $1.12 billion in 2007, but revenues will be eroded by inflation until they reach $700–$880 million in 2020 (Figure 14).[18] This is about 33% more than would be generated without any change in the tax rate.

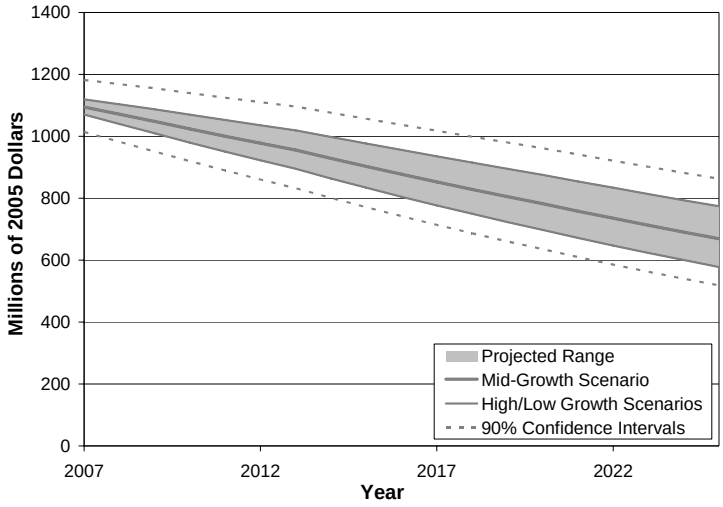


**Figure 14 Revenue Projections for a 6¢-per-Gallon Fuel Tax Increase**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

An incremental approach would provide more robust revenues for a time, but then would succumb to the same inflationary pressures. Raising the tax by 1¢-per-gallon each year for ten years would generate only $178–$187 million in 2007. Revenues would grow during the next ten years at peak in 2016 when the tax was fully phased in. After that, when the

[18] Ranges represent the results for the low- and high-revenue growth scenarios. All monetary values in this section are provided in constant 2005 dollars.

tax rate would remain at 28¢ per gallon, real annual revenues would start declining because of inflation (Figure 15), reaching $1,160–$1,460 in 2020.

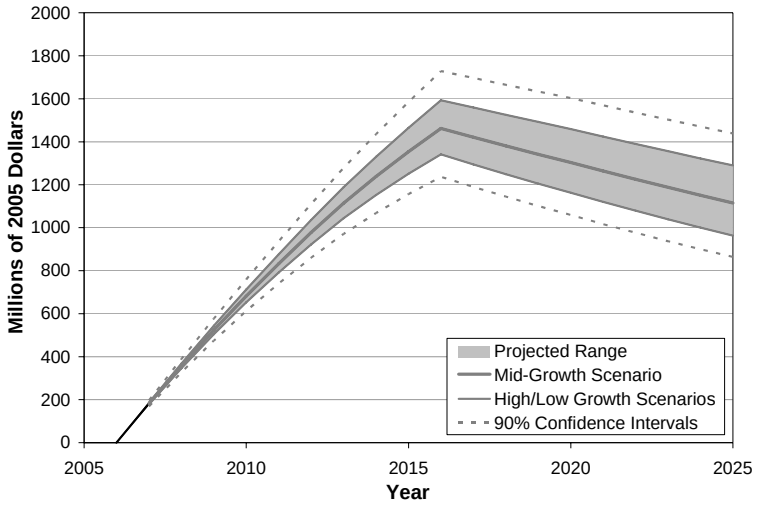


**Figure 15 Revenue Projections for a 10¢ Incremental Fuel Tax Increase**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

Indexing the fuel tax rate to inflation can create a new revenue stream that remains robust over time. The California Legislative Analyst's Office has recommended this approach as one way to help stabilize transportation funding in the state (Legislative Analyst's Office 2004). For the purposes of this study, it is assumed that this is implemented by adopting a new tax that grows over time to fill the gap between the revenue generated by the conventional 18¢/gallon motor fuel tax and the amount that would be generated by its equivalent inflation-adjusted tax rate. This new tax would raise only $80–$126 million in 2007, when only one year's worth of inflation would be taken into account. However, it will grow in real terms each year to $1,010–$1,440 million in 2020 (see Figure 16). Since this new tax grows fastest when inflation is high, it actually generates more revenue under the low revenue growth scenario (which assumes high inflation) than under the high-revenue growth scenario (which assumes low inflation).

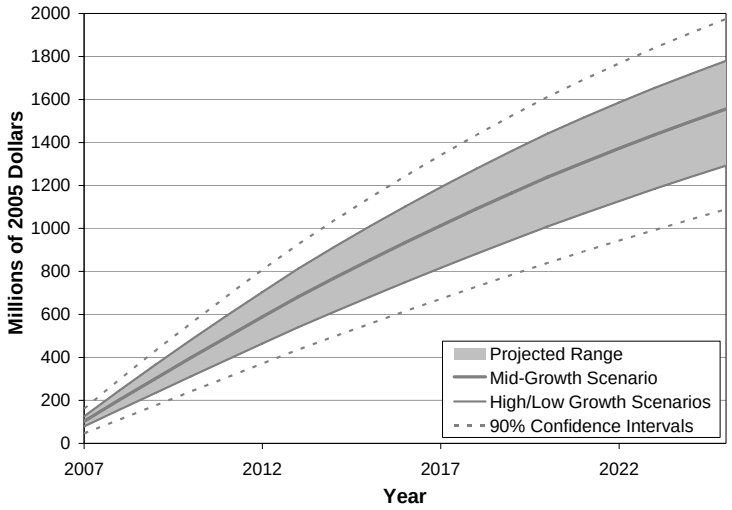


**Figure 16 Revenue Projections for Fuel Taxes Indexed to Inflation**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

## *Ease of Implementation*

Fuel taxes are already collected by the state. Increasing the tax by fixed amount would be easy to administer. Taxes are collected from distributors, and the cost of collection is generally low (Taylor, Wachs, and Weinstein, 2001). Annual increases tied to inflation would involve some additional administrative action, though certainly nothing difficult. The legislation establishing the indexing program would need to designate an inflation rate to use, such as a consumer price index (CPI) for the state, and could include a floor and ceiling, so that the rate does not increase or decrease substantially in a short time (Reno, 2002). The CPI may be the most stable index, compared to indices based on construction costs or fuel prices (Committee for the Study of the Long-Term Viability of Fuel Taxes for Transportation Finance, 2005; Ang-Olsen, Wachs, and Taylor, 2000). However, if construction costs rise faster than the CPI, revenues from the indexed tax may not be adequate.

There is some evasion of fuel taxes. At the federal level, evasion is estimated to be 3%–7% of the gallons of fuel consumed for the gasoline tax and 15%–25% for the diesel tax. Estimates at the state level vary significantly (Rufolo, Balducci, and Weimar, 2006). Researchers analyzing the issue for the state of Kentucky concluded that fuel tax evasion is a "persistent drain on state resources" and that increasing taxes may increase the incentive to evade. They recommended better enforcement (Denison, Eger, and Hackbart, 2000).

### *Transportation System Performance*

Increasing gas taxes by the amounts proposed here (6¢ to 10¢ per gallon or indexed to inflation) are not likely to have a noticeable effect on the use or performance of the transportation system. Any increase in the price of fuel will reduce demand by some amount. However, the demand for fuel relative to price is relatively inelastic, meaning that a small increase in fuel prices, like those proposed here, will have very little effect on demand (Glaister and Graham, 2002; Goodwin, Dargay, and Hanly, 2004). Similarly, any effects on the environment and congestion would also be small. Even so, any increase in the price of fuel does provide an economic incentive to reduce driving and purchase more fuel efficient vehicles. However, whether a vehicle is fuel efficient or low polluting has no effect on congestion.

### *Equity*

Fuel taxes have traditionally been viewed as a user fee, indicating that the users pay in proportion to the costs they impose on the system or how much they use it. When originally established, most vehicles achieved about the same fuel economy, so that the relationship between miles driven and gasoline consumed was about the same for all drivers. Today, with a wide range of fuel economy rates among vehicles, the relationship is not as uniform and the fuel tax is not quite as equitable with respect to system use (Adams et al., 2001).

Fuel taxes tend to be regressive, in that lower income households with vehicles spend a higher share of their income on the tax than higher income households (London et al., 2001; Ryan and Stinson, 2002). However, lower income households that do not own or drive vehicles do not pay the tax, yet they still benefit from the transportation system. This is especially true of lower income people who are transit dependent, to the extent that fuel taxes are used to subsidize transit service. In addition, the fuel tax is about equally regressive as sales taxes (Wachs, 2003). The motor fuel tax can be seen as equitable, in the sense that people pay the tax roughly in proportion to their use of the street and highway system (whether through direct payment of the tax, or through indirect payment of the tax through the cost of other goods).

### *Political Feasibility*

State legislatures, including California's, have been reluctant to raise any taxes, and fuel taxes have been no exception (see Appendix G for an analysis of state fuel tax rates and trends). Nationwide, the average state fuel tax rate increased from 7¢ per gallon in 1970 to

20¢ per gallon in 2005 (in constant dollars, this is equivalent to a 47% drop in the fuel tax rate). However, after accounting for inflation, the average rate actually fell from 7¢ per gallon to under 4¢ per gallon. In addition, 28 states have raised their rates since 1992, but only three have raised their rates enough to compensate for the effects of inflation (Puentes and Prince, 2003). In addition, several states now have voter-imposed tax limitations requiring that voters approve any increase to the fuel tax.

Despite this reluctance on the part of legislatures and voters, raising fuel taxes by a modest set amount may be politically feasible under certain scenarios. In the state of Washington voters and legislators both supported raising fuel taxes despite determined opposition. In November 2005, the voters of Washington defeated a ballot initiative that would have repealed a 9.5¢ per gallon increase in the state's gas tax approved by the legislature in May of that year. A 2004 public opinion survey of Washington households found little support (31%) for increasing the gas tax (Sage Projections, 2004). Despite this, in 2005 the state legislature approved a phased increase in the gas tax as well as increases in weight fees, licenses, and permits. In less than three months, a referendum (Initiative 912) qualified for the November 2005 ballot to repeal the phased 9.5¢ per gallon gas tax increase. Proponents of the initiative included the Libertarian and Republican political parties and the Washington State Farm Bureau. Opponents included a broad alliance of unions, environmental groups, developers, business groups, and the Democratic Party (League of Women Voters of Seattle, 2005). Opponents argued that the typical driver would only pay $52 dollars extra per year as a result of the tax package in 2008. The measure ultimately failed 52% to 48%, so the fuel tax increase remained. Opponents of the measure outspent proponents by as much as five to one (Public Disclosure Commission, 2006). Reasons for the failure of the measure include the voting power of urban counties, a broad alliance of various interest groups, failure of the proponents of the measure to provide an alternate plan for easing transportation congestion and promoting economic development, a clear set of prioritized transportation improvement projects, and potentially the failure of public infrastructure in the Southern states after Hurricane Katrina (Reuters News Service, 2005; Shannon, 2005). (For more details on the Washington case, see Appendix I).

This report's survey of California residents found that 43% of likely voters would support a 10¢ increase imposed as a 1¢-per-year increase over ten years. This modest level of support for a relatively large increase in the tax may indicate some political feasibility for a more modest increase. The level of support for this tax increase was higher than for a general increase in vehicle registration fees from $31 to $62 per year (34%) and slightly higher

(though not statistically significant) than support for increasing the statewide sales tax by 1/2¢ (41%) (see Table 12; more detailed results from the survey appear in Appendix A).

**Table 11 Support by Likely Voters for Fuel Tax Increases**

| Respondent Category | Increase 1¢/Gallon for Ten Years | | Index to Inflation | |
|---|---|---|---|---|
| | For (%) | Against (%) | For (%) | Against (%) |
| Statewide | 43 | 54 | 28 | 66 |
| By Region | | | | |
| Bay Area | **53** | **42** | 34 | 60 |
| Los Angeles | **43** | **55** | 29 | 65 |
| Other Southern California | **40** | **58** | 24 | 70 |
| Central Valley | **38** | **59** | 27 | 68 |
| Central Coast | **39** | **57** | 24 | 69 |
| Rural | **45** | **55** | 28 | 68 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at p<0.05. Analysis of differences: includes opposition and "don't know" responses. See Appendix A for complete survey results.

**Table 12 Preference among Likely Voters for Options to Raise $1 Billion**

| Option | Rank | Preferred Revenue Option (%) |
|---|---|---|
| Raise Statewide Sales Tax by 1/4¢ | 1 | 26 |
| None of the Above | 2 | 19 |
| Raise Vehicle License Fee To 1% | 3 | 15 |
| Raise Registration Fee for Personal Vehicles by $50 | 4 | 14 |
| Raise Gas Tax by 6¢ per Gallon | 5 | 13 |
| Add New Mileage Fee of 1/3¢ per Mile Driven | 6 | 10 |

*Note:* See Appendix A for complete survey results.

Support for the ten-year phased fuel tax hike varied significantly by region, with a majority of Bay Area voters supporting the option (Table 11). The significant differences in levels of support by region suggests that regional or local fuel taxes may be a politically feasible option for some regions, even if there is weak support for a statewide fuel tax increase.

The level of support for an increase in the fuel tax would depend upon how the state proposes to spend the new funds and how the proposal is presented or framed. For example, Washington had a list of projects and programs that the tax would fund—or that would not be funded if the tax was repealed. In addition, voters may be less likely to repeal an existing tax than to approve a new tax. The poll did not specifically test whether providing

a list of projects or spending categories would increase voter support, though many other polls and actual votes on local option sales taxes have supported that finding. A recent *New York Times* poll found that 55% of adults supported an increase in the gas tax if it reduced dependence on foreign oil and 59% supported an increase if it reduced global warming. This contrasted with 85% who opposed an increase if it was presented without any direct outcomes. The poll did not specify the amount of the increase (Uchitelle and Thee, 2006).

In contrast, there is very little support for the concept of indexing the tax to inflation, even though this amount was presented as a smaller amount—about 1/2¢ for the current year. This opposition may reflect a distrust of government and reluctance to allow budgets to automatically grow. For example, the State of Wisconsin recently repealed its fuel tax index. In signing the bill, the state's governor indicated that now the legislature would need to "face this issue directly and honestly" (Walters and Schultze, 2005). The topic became a central issue in the governor's race, with challengers of the incumbent governor emphasizing a desire to force legislative votes and more accountability in their championing of the repeal (Walters, Forster, and Marley, 2005). In California, another evaluation of indexing the gas tax cautioned that the public might not have enough confidence in Caltrans to allow such automatic budget increases (Taylor, Wachs, and Weinstein, 2001). However, there is some recent precedent in California for tying transportation-related fees to inflation. In the 2003–04 session, the governor signed a bill (SB 1055) that increases the driver's license and other small fees each year based upon inflation.

## Mileage-Based Fees

### *Description and Background*

With the increasing use of hybrid vehicles and the expectation that the share of nongasoline vehicles will grow in the future, several researchers, organizations, and a few states are proposing replacing the gas tax with mileage-based fees. A mileage-based or vehicle miles traveled (VMT) fee could replace a fuel-based tax. Drivers would be charged for every mile driven instead of paying a fuel tax. Depending upon the technology used, fees could vary by time of day, location, or type of vehicle. Such adjustments could make the fee more closely match the cost a driver imposes on the transportation system, by charging more during congested periods, for example.

One motivation for these proposals is that fuel-based taxes may not be viable in the long term, and another is that a mileage fee is a fairer and more accurate form of a user fee. The

gasoline tax was originally supported as a user fee—drivers generally paid the same amount per mile driven. But as the difference in gas mileage rates between vehicles increases, gasoline consumption is no longer a very accurate gauge of the use of the transportation system. If fuel sources diversify more, these differences may become more pronounced.

Oregon and Washington are two states that are examining mileage fees. In 2001, the Oregon Legislature recognized the inability of the state's current excise tax on fuels to continue to generate adequate funds and created the Oregon Road User Fee Task Force (RUFTF). The task force was charged to examine possible alternatives to the existing gas tax. After reviewing 28 possible options, the task force agreed upon a mileage-based fee as the preferred option. This option was selected primarily on the basis of equity, administrative feasibility, and cost (Whitty and Imholt, 2005). Testing of a user fee system is underway. The Oregon Department of Transportation hopes to recruit 250 to 300 vehicles to test the technology. Each vehicle will be equipped with a GPS device to track mileage within the State of Oregon. Devices at specially equipped gas stations will read the mileage count and charge the driver 1.2¢ per mile, rather than a gas tax (Oregon Department of Transportation, 2006). It is anticipated that the 2009 session of the Oregon legislature will consider draft legislation for a road user fee system.

Washington's Puget Sound Regional Council is also testing GPS technology in the Seattle area to implement a mileage fee. The 2005 Federal Surface Transportation Act (SAFETEA-LU) authorized a three-year, large-scale field test of a mileage-based road user charge. The project evolved from a proposal supported by 15 state departments of transportation (Committee for the Study of the Long-Term Viability of Fuel Taxes for Transportation Finance, 2005).

### *Revenue Generation*

Current discussions of mileage fees suggest setting them at a level that would be revenue-neutral—an equivalent replacement of current fuel taxes. For California, a mileage fee of about 1¢ per mile would generate about the same revenue today as the current fuel tax. Figure 17 illustrates how the net additional revenues from replacing the fuel tax with a mileage fee will accelerate after California's carbon dioxide tailpipe emissions standards are phased in later this decade and the state's vehicle fleet becomes more fuel efficient. In 2020, such a fee would generate about 18% more than the fuel tax it would replace (2005 constant dollars). Revenues would increase over time, as population and driving increases.

As with gasoline taxes, mileage fee revenues would be eroded by inflation; however, unlike gasoline taxes, mileage fees would be immune to changes in vehicle fuel economy.

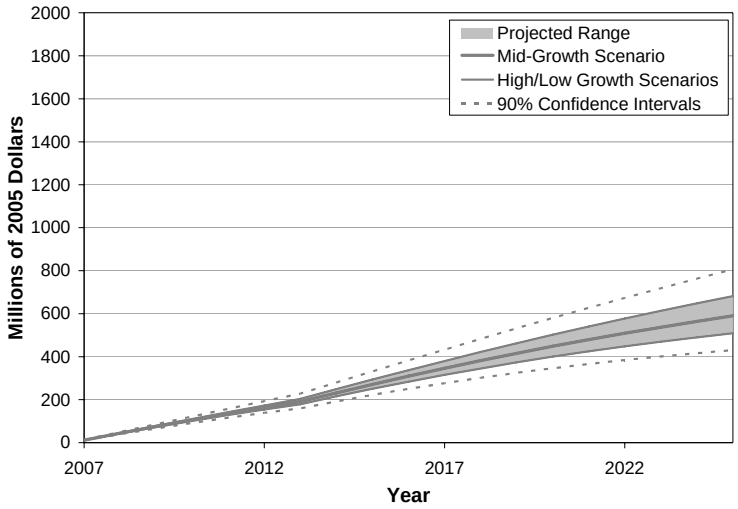


**Figure 17 Net Revenue Projections for a Mileage Fee Replacing a Fuel Tax**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

Most discussions of mileage fees also anticipate gradual introduction over time; only new vehicles would be equipped to pay the fee, so it could take 15 to 20 years for the entire system to be phased in, with virtually all vehicles paying the fee instead of a fuel tax. Phased implementation would be significantly less expensive, because it would not require retrofitting of many vehicles. However, revenues may not increase as much as shown in Figure 15 if the system were phased in.

### *Ease of Implementation*

Researchers who have examined mileage fees generally conclude that collecting such a fee is feasible with today's technology (Forkenbrock and Kuhl, 2004; Rufolo and Bertini, 2003). There are three ongoing projects testing the technical feasibility of using GPS and other technology to collect a mileage fee.

Despite the fact that current technologies would allow collecting mileage fees, they would be significantly more expensive to collect than the current method of collecting the fuel tax. The costs would depend on the tracking system used. For a system like that proposed in Oregon and the SAFETEA-LU project, there would be an initial capital cost to install central facilities and equipment at gas stations or other reading locations. The Oregon proposal relies on equipment installed at gas stations to collect mileage fees instead of a

fuel tax. Oregon estimated these costs at $33 million for the whole state (Whitty and Imholt, 2005). The costs for equipment in the vehicles would depend on how the program was phased in. If the fee were phased in slowly and only applied to new vehicles, the cost per vehicle might be very low, particularly as more vehicles are equipped with GPS. Retrofitting vehicles would be more expensive. The estimated retrofit cost per vehicle for Oregon's pilot project was $250. In addition, there would be costs involved in tracking and collecting the fees, whether through gas stations or other reading facilities. Finally, other concerns such as the potential for fraud, which can affect revenue collection, need to be examined through the testing.

The system would require a completely new administrative system as well as new supporting technologies, making early implementation difficult. The system could be created within an existing state agency, such as the Department of Motor Vehicles, but even that approach would still require significant changes to the existing administrative structure.

It is unlikely that a single state could effectively implement a mileage-based fee. Discussions of such fees have suggested that a nationwide or multi-state effort is necessary. If in the future the federal government moves towards a mileage-based fee, this may ease implementation at the state level.

### *Transportation System Performance*

Of all the options considered in this analysis, a mileage-based fee has some of the greatest potential to improve transportation system performance because it is a true user fee. People who drive more pay more. There would be an economic incentive to only drive when it is worth the price per mile. If the fee varied based on time of day, location, or level of congestion the fee could improve system performance even more. Driving on the most congested roads would cost more.

The overall impact on the system would depend on how drivers respond to the fee and whether the fee is set to internalize the external costs, such as pollution. If the fee is set at a level to just replace the gas tax, the overall effect on travel may not be large. The price elasticity for gasoline is relatively inelastic, indicating that people don't reduce driving very much as gas prices increase, especially in the short run (Glaister and Graham, 2002; Goodwin, Dargay, and Hanly, 2004). However, it has been hypothesized that with a mileage fee drivers will be more conscious that they are charged per mile than they are

with the current fuel taxes and thus might adjust more than with changes to gas prices or taxes. The current mileage fee tests should provide insight on this question.

If a mileage fee did not vary by vehicle emissions or weight and it was set at a level just to replace the fuel tax, it may not support the state's objectives of reducing emissions and fuel consumption. For example, a large high-polluting vehicle would pay the same amount per mile as a low-polluting hybrid vehicle. A mileage fee that does not vary by vehicle type would not encourage people to purchase more fuel efficient vehicles, as the gas tax currently does (Taylor, Wachs, and Weinstein, 2001).

### *Equity*

Like other fees that derive from use of the transportation system, mileage fees are equitable in the sense that they vary according to the benefit that users derive from the system. In addition, mileage fees are roughly equitable according to the costs imposed on the system, since they are proportional to aggregate system use. Variants on the mileage fee—such as fees that vary according to vehicle—can ensure that impacts are reflected even better in the costs paid by system users. From a social perspective, a mileage fee is regressive, since poorer households pay a larger share of their incomes toward the fee. Overall, the distributional effects of such a system are complex and would need further evaluation.

### *Political Feasibility*

Currently, a mileage fee is probably the least politically feasible option considered in this study. Less than one-quarter (23%) of the likely voters surveyed supported a mileage fee of 1¢ per mile that would replace the gas tax (Appendix A, Table 32). One major issue surrounds concerns over privacy if the system tracks actual vehicle routes and locations. Proponents have responded that the system could be set up so that it would not track individuals' travel (Committee for the Study of the Long-Term Viability of Fuel Taxes for Transportation Finance, 2005), but distrust of government may lead some people to distrust such promises. In addition, some suburban and rural areas may oppose a mileage fee system because residents have fewer alternatives to driving.

Although a mileage fee is currently highly unpopular, acceptance may well increase over the next five to ten years. First, as the public gains more experience with tolls and other pricing systems, mileage fees may seem more familiar. Second, the greatest level of acceptance was from people aged 18 to 34 (27%), indicating that acceptance may grow over time as the population changes. Finally, varying the fees according to vehicles' weight or emissions may make the fees more politically acceptable. A survey of Texas residents

showed that if tolls were imposed, there was strong support for higher tolls for heavier, more polluting vehicles (Kockelman et al., 2006).

## Increasing Vehicle Registration Fees

### *Description*

Owners of personal vehicles in California pay a base annual registration fee of $31 per vehicle. The revenue can only be spent on the state's administration and enforcement of traffic and vehicle laws. About 70% of the money currently goes to the California Highway Patrol (CHP) for enforcement. In addition, a separate $9 per vehicle fee is collected specifically for the CHP. Beyond these statewide fees, many counties and regional air pollution districts collect vehicle registration fees for specific purposes, such as service authorities for freeway emergencies, theft deterrence and enforcement, and emission reduction programs. Fees for these programs are usually $1 to $4 per vehicle. All of these fees are separate from the vehicle license fee (VLF), which is an in-lieu property tax based upon the value of the vehicle.

With new legislation, the state could increase the registration fee for personal and commercial vehicles and devote the new revenues to transportation infrastructure, rather than administration and law enforcement. Several studies and states have considered this option for raising revenues (Wasatch Front Regional Council and Mountainland Association of Governments, 2004; Mierzejewski et al., 1995; Blue Ribbon Panel on Transportation, 1996; Foyle, Milazzo, and Goode, 1998; London et al., 2003). After failed attempts to raise state gas taxes, the Oregon legislature nearly doubled its two-year registration fee from $30 to $54. The new funds are being used to pay off bonds to finance highway projects, including a major bridge repair program.

One alternative to raising all registration fees equally is to vary the new vehicle registration fee based upon vehicle characteristics, such as weight, fuel economy, or emissions. Varying the fee by weight, with heavier vehicles paying more, reflects the increased damage heavier vehicles cause to roads. Heavy trucks already pay higher fees, but all light-duty vehicles pay the same registration fee. The transportation funding package passed by the Washington legislature in 2005 included new light truck and passenger car weight fees, ranging from $10 to $30 per vehicle annually, depending on weight. Varying the fee based upon fuel economy or emissions provides support for statewide objectives to reduce fuel use, greenhouse gases, and pollutants. Variable fees could be set based on the specific make, model, and year of the vehicle. For newer vehicles, the fees could be based upon EPA's fuel

economy data or the California Air Resources Board (CARB) certification of the vehicle model's emissions. Even new vehicles that meet California emission standards emit a range of pollutants. For example, a Ford Escape Hybrid vehicle may emit about 90% fewer pollutants per mile than the average vehicle, while a Ford F-250 truck may emit 43% to 190% more, depending upon the engine (California Air Resources Board, 2005, 2006).

### *Revenue Generation*

The overall revenue potential for this option is modest, though very stable and predictable. Adding a $31 per vehicle fee for transportation would generate from $460 to $580 million annually in 2020 (constant 2005 dollars). This is a sizeable amount—an addition of at least 20% to state fuel tax revenues—though less than other sources considered in this study. For example, adding $31 per vehicle registered would raise about one-third the amount that could be raised through a 0.25% statewide sales tax. Because of inflation, real revenues from the increased registration fee would decline over time (Figure 18).

Because the increase would require new legislation, the Legislature could specify how the new funds are distributed. For example, the distribution could follow the distribution used for the state fuel tax, with about 65% of the revenues going to the State Highway Account (SHA), 11% to counties, and 24% to cities. The formula for distribution to cities and counties could be based upon the number of vehicles registered in the locality.

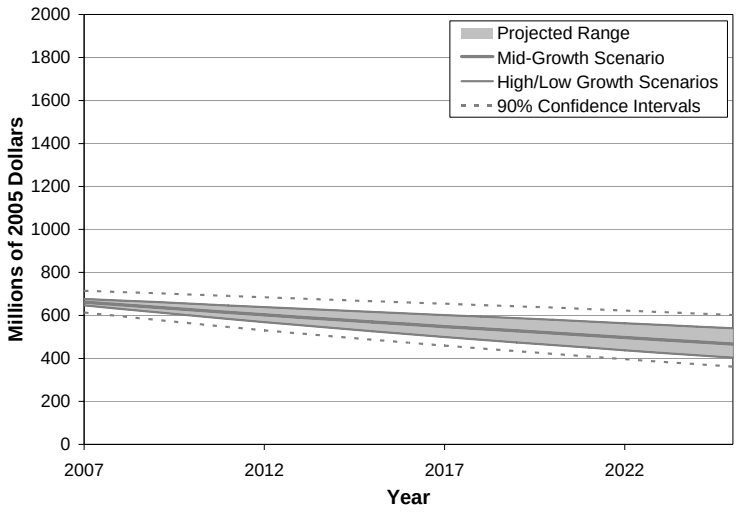


**Figure 18 Revenue Projections for $31 Increase in Registration Fees**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

If the fees varied based upon vehicle characteristics, the fee structure could be designed to generate the same amount of total revenue as a flat $31 increase for all vehicles. In such a case, the largest, least fuel efficient, or most polluting vehicles would be paying more than $62 per year and the smallest, most fuel efficient, and least polluting vehicles would pay less than $62 per year.

### *Ease of Implementation*

This fee increase would be very easy to administer. A variety of fees, including the basic registration fee, are currently collected by the Department of Motor Vehicles and distributed to different entities. Fee increases and changes are routinely handled by the DMV. The costs to administer a flat increase in the fee would be negligible compared to current costs.

Costs would be slightly higher if the fee varied by vehicle characteristics. Varying fees based upon vehicle characteristics would add complexity and be slightly more difficult but still very feasible. The DMV system includes the vehicle identification number (VIN), which can be decoded to indicate the vehicle make and model. The state would need to set up a system that charges vehicles different fees based upon the make, model, and year. The original legislation or a designated state agency would need to develop the fee schedule based upon the vehicle characteristics. Data from EPA or CARB could then be used to match individual makes, models, and years to the schedule.

The opportunity for fraud or evasion would be about the same as for the existing registration fee. Estimates of the share of vehicles operating in California that are not registered ranges from under 4% to over 10% (Younglove et al., 2004). Increasing the fee could increase the rate of non-registration very slightly.

### *Transportation System Performance*

Registration fees are user fees, in that they are paid by people who own vehicles and, therefore, use the transportation system. However, because the fees are levied on a per-vehicle basis, they do not reflect the vehicle's actual use of the system. That is, the fee charged for a vehicle driven 1,000 miles per year is the same as that charged for a vehicle driven 10,000 miles per year. Therefore, the fee does not improve the efficiency of system use or operation (Ryan and Stinson, 2002; Clary et al., 2000). If the fee varied based on emissions or gas mileage, it would support statewide policies to reduce greenhouse gases and criteria air pollutants regulated by the state's Clean Air Act. The fees would have no measurable impact, positively or negatively, on congestion or economic development.

### *Equity*

Overall, the equity effects of raising vehicle registration fees are likely mixed. The degree of geographical equity will depend upon how the fees are distributed. To the extent that fees are distributed back to projects and local governments in proportion to the number of vehicles in the area, then the people paying the fee are more likely to benefit. However, registration fees are only a very imprecise user fee, as there is no link between how much a person drives and the cost of the fee.

With respect to income, the flat-rate registration fee is regressive; lower-income households with vehicles pay a higher share of their income to the fee than higher-income households. Varying the fees based on smog-forming emissions (not carbon dioxide) would make it more regressive, but only to the extent that lower income households tend to have older, more polluting vehicles. By contrast, there is little evidence that fuel economy of vehicles varies much with household income (U.S. Energy Information Administration, 2005). Therefore, a fee based upon fuel economy should not be more regressive than a flat fee.

### *Political Feasibility*

This option raises an existing fee, which may be more acceptable than creating a new fee. However, raising fees is generally not popular with voters or elected officials. Of the likely voters surveyed, only one-third (34%) indicated that they would support a proposal to increase the vehicle registration fee to $62 per year.

However, respondents were much more enthusiastic about fees that varied according to vehicle performance. When respondents were asked if they would support a proposal that raised the fee to an average of $62, but varied the fee according to emissions and gas mileage, support increased significantly, from 34% to 45% of voters, an 11% increase. Just over half (51%) of the voters opposed the option, with 4% not knowing. Of the revenue options presented individually on the survey, this garnered the highest level of support. The survey also asked "generally speaking, should the fees that people pay to register their vehicle take into account the gasoline mileage those vehicles achieve?" or "…the amount of pollution those vehicles emit?" There was a much higher level of support for linking fees to emissions. Nearly two-thirds (64%) of voters thought that fees should take into account air pollution emissions, while less than half (49%) thought fees should take fuel efficiency into account. The question that specifically asked about support for an increase to $62

included linking the fee to pollution or gas mileage. If the question had only included emissions, support may have been higher than 45%.

Support for increasing registration fees was the highest in the Bay Area, with 42% supporting the general increase and 54% supporting an increase varying by emissions or gas mileage (Table 13). Linking the fee to mileage or emissions had the largest effect in Los Angeles and the Central Valley—the areas with the worst air quality problems in California. The option of varying the fee based on emissions or mileage also increased support particularly among women voters, Asian and black voters, and younger voters (18–34 years old).

**Table 13 Support by Likely Voters for Increase in Registration Fees**

| Respondent Category | Base: Increase Fee to $62/Year (%) | Option: Vary Fee by Gas Mileage or Emissions (%) | Change in Support of Option over Base (% point difference) |
|---|---|---|---|
| Statewide | 34 | 45 | 11 |
| **By Region** | | | |
| **Bay Area** | **42** | **54** | 12 |
| **Los Angeles** | **32** | **44** | 12 |
| **Other Southern California** | **34** | **45** | 11 |
| **Central Valley** | **28** | **30** | 13 |
| **Central Coast** | **32** | **41** | 9 |
| **Rural** | **32** | **37** | 5 |
| **By Sex** | | | |
| **Men** | **37** | **45** | 8 |
| **Women** | **30** | **44** | 14 |
| **By Race** | | | |
| **White** | **38** | **47** | 9 |
| **Latino** | **27** | **38** | 11 |
| **Asian** | **27** | **50** | 23 |
| **Black** | **23** | **40** | 17 |
| By Age | | | |
| 18–34 years | 30 | 49 | 19 |
| 35–54 years | 34 | 44 | 10 |
| 55+ years | 36 | 44 | 7 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$. Analysis of differences includes opposition and "don't know" responses. See Appendix A for complete survey results.

When respondents were given six options to choose from for raising $1 billion per year, raising the registration fee by $50 (to $81) ranked fourth, with 14% of the voters

supporting the option, trailing a statewide 1/4¢ sales tax (26%), none of the above (19%), and raising the vehicle license fee to 1% (15%). The differences in level of support reflect, in part, the public responding to the *rate* amount, rather than the total amount they would end up paying; a 1/4¢ sales tax and a 1% VLF may sound smaller than a $50 fee.

## A New Vehicle License Fee for Transportation

### *Description*

The state currently charges an annual vehicle license fee (VLF) of 0.65% of the estimated value of each registered vehicle. The fee is akin to a personal property tax. This fee was lowered by the legislature from a rate of 2%. The revenue from the VLF does not go to transportation programs; it is distributed to local governments. This evaluation considered increasing the VLF to 1.0% of the vehicle's value, with the additional increment (0.35%) dedicated to transportation.

### *Revenue Generation*

A VLF increase of 0.35% dedicated to transportation would generate the largest amount of revenue of the tax and fee options considered, $1.84 to $1.97 billion per year in 2020 (2005 current dollars). This is at least an 80% increase over what the fuel taxes would be generating in that year if they are not raised. The VLF raises so much revenue because it is based on the value of vehicles, which increase over time with inflation (Figure 19). A 0.35% VLF would generate about 35% more than a 1/4¢ sales tax.

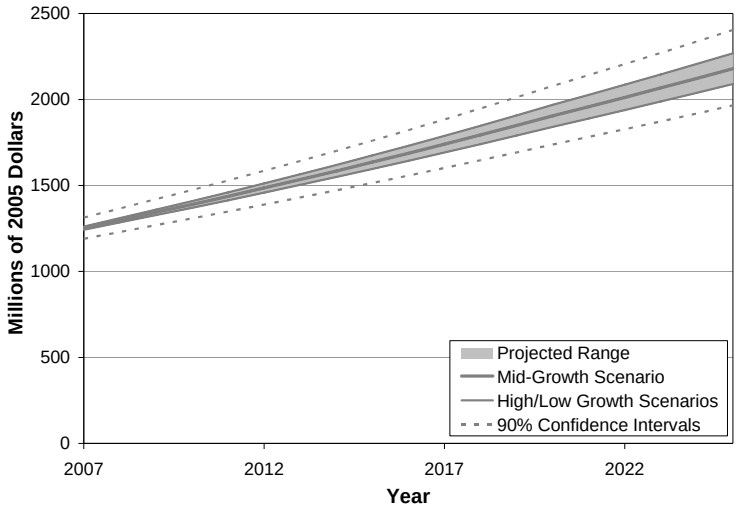


**Figure 19 Revenue Projections from 0.35% Vehicle License Fee for Transportation**
*Source*: Authors' analysis. See Appendix C for an explanation of methodology.

### *Ease of Implementation*

Because the VLF is already collected, it would be very easy to administer an incremental 0.35% fee for transportation. However, legislation would be required to increase the fee and devote it to transportation.

### *Transportation System Performance*

The fee would have no significant impact on transportation system performance.

### *Equity*

Like a vehicle registration fee, the VLF provides the user-fee–like benefit of only being paid by individuals who directly operate vehicles on the street and highway system. However, also like the registration fee, the VLF is a poor user fee because there is no link between the amount of the fee (i.e., the relative value of the vehicle) and the owner's use or benefits received from the transportation system.

With respect to income, the fee is regressive. Higher income households do tend to pay more, since they own more expensive vehicles. However, the VLF is deductible from federal and state income taxes, something higher-income taxpayers are more likely to take advantage of, and also receive greater benefits from both because of their higher marginal tax rates. After taking these deductions into account, the VLF is about equally as regressive

as the sales tax, but less regressive than a flat vehicle registration fee (Dill, Goldman, and Wachs, 1999).

### *Political Feasibility*

Likely voters surveyed were moderately supportive of increasing the VLF to 1%, with 42% supporting the proposal and 53% opposing the proposal (see Appendix A, Table 35). However, these survey results may not accurately reflect the outcome if the proposal were put before the voters. The VLF, often referred to by critics as the car tax, was the subject of many significant political fights in California in recent years. The survey used the official term for the fee—the vehicle license fee—and explained that it is currently 0.65% of the value of a vehicle. A campaign against such a proposal is likely to use other language and may become highly politically charged. However, it is still important to note that increasing the fee was the second most popular method of raising $1 billion (see Table 12). While voters may not be ready for a VLF increase now, support may be higher in the future as memories of recent political fights fade. Because the fee would be dedicated to transportation, rather than going to local governments, it could be named something different to distinguish its purpose and reduce the political baggage attached to the name VLF.

## Weight-Mile Taxes

### *Description*

Most of the federal and state revenue generated for highway construction comes from fuel tax revenues. This is an equitable way to charge for road use as long as there is a strong correlation between road use and wear, and fuel consumption. In the case of heavy vehicles this relationship can break down, and fuel taxes may not recover the costs of truck road wear. A weight-mile tax, or fee, is based on vehicle weight, number of axles, and distance traveled. It is designed to charge trucks for the portion of the cost of highway construction and maintenance attributable to heavy vehicles, so is considered a true user fee.

Most states tax truck operations through a combination of taxes on diesel fuels and registration fees, not through a weight-mile tax. (Oregon is the only state that does not tax truck diesel fuel.) California does not currently impose a weight-mile tax, although it does impose a fee based on truck weight. Currently, only four states impose a weight-mile tax—Oregon, New Mexico, New York, and Kentucky. States that do not use a weight-

mile tax tend to impose higher truck registration fees, based on vehicle value, and higher sales or property taxes on vehicles (Adkins, 2000).

### *Revenue Generation*

A weight-mile fee can generate substantial revenue, depending on the level of the fee. Oregon imposes a weight-mile tax for vehicles in excess of 26,000 pounds. The tax rate increases as the weight of the vehicle increases and varies from 4¢ per mile to 13.59¢ per mile. In 2000, Oregon collected an estimated $225 million in revenues from the weight-mile tax (Adkins, 2000). Weight-mile fees in Oregon represent approximately 20% of state highway fund revenues (Whitty and Imholt, 2005). Revenues from the weight-mile tax are dedicated by the Oregon Constitution to public highways, streets, roads, and rest areas.

Kentucky imposes a smaller weight-mile fee and only on the heaviest vehicles, and as a result collects considerably less revenue than Oregon. Kentucky applies a tax of 2.85¢ per mile for vehicles in excess of 59,999 pounds. The state collected $75 million in road tax revenue in 2000, equivalent to 7.1% of total fuel tax revenues (McNeill, Perkins, and Hackbart, 2002).

### *Ease of Implementation*

Administration of the tax imposes a burden on both private and public entities. Trucking companies are required to maintain records of the calculated weight miles traveled and provide reports to the appropriate government transportation agency on a monthly or quarterly basis. Government staff then must review the records, and periodic audits are required. As a result, use of a weight-mile tax produces significant administrative and compliance costs. In Kentucky, truckers file a Kentucky-use report quarterly that documents miles traveled within the state. Truck operating permits are checked at weigh stations for validity, and for outstanding dues or penalties. At the same time, truck size, date and time are entered in the state's Automated Licensing and Taxation System to compare against self-reported data from the quarterly use reports (McNeill, Perkins, and Hackbart, 2002). The state of Oregon estimates that it spends 4.8% of revenues collected from its weight-mile fee to administer the fee (Cambridge Systematics, Inc and SYDEC, Inc., 1996).

As a result of the need for accurate information on vehicle characteristics and miles traveled, the imposition of a weight-mile tax can present several technical challenges related to rate setting, measurement, collection, enforcement, and reporting. Data are

required not only from individual truckers and trucking companies, but also from state weigh stations, and law enforcement. A North Carolina study of highway maintenance funding conducted in 1998 concluded that administrative costs would be too burdensome if SmartCard technology were not used (Foyle, Milazzo, and Goode, 1998).

### *Transportation System Performance*

The weight-mile tax, as a true user fee, should improve transportation system performance by instituting a mechanism that provides an incentive to use the system so as to minimize the cost to the user. However, in the case of long-haul trucking across state lines, the lack of uniformity in the application of weight-mile taxes can compromise system performance benefits.

### *Equity*

A weight-mile tax is equitable insofar as it provides a method for charging trucks their share of the cost of building and maintaining the road system that is related to the relationship between vehicle weight, road use, and road wear.

### *Political Feasibility*

While offering substantial revenue potential, weight-mile taxes meet with consistent and significant opposition from trucking associations, so as to make them politically difficult to impose. Nationally, of eight changes to state weight-distance tax rates, seven of the eight changes resulted in a reduction or elimination of this tax between 1990 and 2000 (Hackbart, Perkins, and Fordham, 2002). "The trucking industry is a significant player in the economy of California, and it has proven difficult or impossible in the political arena to increase tax revenues through higher truck weight fees" (Wachs, 1997).

## SUBSIDY OPTIONS

## Increasing the Statewide Sales Tax

### *Description*

The state already imposes a 0.25% sales tax, which is returned to local governments to fund public transit services. In addition, transportation authorities or transit districts covering eighteen California counties currently collect local option sales taxes of 0.25% to

1.0%, dedicated to local transportation projects or transit subsidies. This study examined the adoption of an additional 0.25% sales tax for transportation.

### *Revenue Generation*

A statewide sales tax could be a significant source of revenue. A 1/4¢ statewide sales tax would generate $1.465–$1.57 billion per year in 2020 (2005 constant dollars). Sales tax revenues are dependent upon the economy and can be less stable than fuel taxes (Adams et al., 2001). A statewide tax may be more stable than county-level taxes, which may be more susceptible to local economic conditions. Its revenues would grow over the long term and would not be eroded by inflation.

### *Ease of Implementation*

Sales taxes are already collected and distributed to various government entities. Adding this tax should not be difficult administratively or technically. In addition, the tax is easy for people to understand, and they are familiar with the concept (Taylor, Wachs, and Weinstein, 2001).

### *Transportation System Performance*

A sales tax on all goods and services dedicated to transportation has no direct relationship with the use of the transportation system. Therefore, it would not improve transportation system performance or support the state's environmental objectives. In fact, while fuel taxes may encourage residents to purchase more fuel-efficient vehicles, sales taxes "do nothing to encourage more efficient or socially responsible use of the transportation system" (Wachs, 2005). To the extent that economic consumption might decline with the higher tax, there could be a small adverse effect on the state's retail sector.

### *Equity*

A sales tax is one of the least equitable ways to finance transportation infrastructure. There is no direct relationship between who pays the tax and who imposes costs on the system. Similarly, while everyone benefits in some manner from the transportation system—goods movement and emergency services being two obvious ways—that benefit is not in proportion to the amount of goods and services purchased or sales taxes paid. Sales taxes are also one of the more regressive taxes, in that low-income households pay a higher share of their income for the tax (Taylor, Wachs, and Weinstein, 2001; Wachs, 2005; Reno, 2002).

### *Political Feasibility*

Despite a general antitax sentiment among voters, many of the state's most populous counties have succeeded in getting local option sales taxes approved. A majority of voters seem to see the tax as a small amount and are willing to agree to it if they see where the money will go and think they will benefit from those projects. A tax at the state level may have to similarly demonstrate direct benefits to gain voter support. A 1/2¢ statewide sales tax was supported by 41% of the likely voters surveyed and opposed by 57% (Table 14). While the differences between all six regions were not statistically significant, there were higher levels of support in the central valley and rural areas, where local option taxes don't exist. When asked about different ways to raise $1 billion for transportation, a 1/4¢ sales tax was the most popular option, supported by 26% of the voters. This was at least ten percentage points higher than any other revenue-raising option (Table 12).

**Table 14 Support by Likely Voters for Increasing Statewide Sales Tax**

| Area | For (%) | Against (%) |
|---|---|---|
| Statewide | 41 | 57 |
| By Region | | |
| Bay Area | 39 | 58 |
| Los Angeles | 39 | 58 |
| Other Southern California | 40 | 58 |
| Central Valley | 45 | 53 |
| Central Coast | 35 | 63 |
| Rural | 48 | 47 |

*Note*: See Appendix A for complete survey results.

## GENERAL REVENUE

## General Obligation Bonds

### *Description*

The state could issue general obligation (GO) bonds to pay for transportation infrastructure. Such bonds are paid off with general state revenues, including income taxes. Nationwide, the amount of borrowing to fund transportation infrastructure has grown significantly, representing about 9.4% of highway revenues in 2002 (Wachs, 2005).

### *Revenue Generation*

Bonds do not generate revenue; they are a mechanism to finance infrastructure through borrowing. The bonds would provide money in the near term, paid off over time through general tax revenues. The amount of money made available would depend upon the size of the bond issue. Recent proposals for statewide transportation bonds have been in the range of $10 to $15 billion. The costs to collect and administer the bonds includes the cost of the interest, which over a 20 or 30 year period could be more than the value of the principal (Wachs, 2005). On the other hand, if construction costs are expected to increase at a high rate in the future, higher than inflation and interest rates, bond financing may be help reduce overall costs.

### *Ease of Implementation*

Statewide bonds are a common mechanism for funding infrastructure and would be relatively easy to administer, once approved. General obligation bonds require approval by 50% of voters.

### *Transportation System Performance*

Because bonds are paid off over time through general revenues, the funding mechanism would have little or no impact on the performance of the transportation system.

### *Equity*

General obligation bonds for transportation may not be very equitable in terms of costs or benefits; there is no direct relationship between the amount users of the system pay and the amount they benefit or the costs they impose on the system. The exact equity effects depend upon the source of revenue used to repay the bonds. Overall, California has one of the least regressive systems of public revenue in the U.S., but has been growing more regressive due to the state's increasing reliance on fees and sales taxes (Institute on Taxation and Economic Policy, 2003).

Bonding can also be seen as inequitable from an intergenerational perspective. By deferring payments over 30 years, this approach imposes liabilities on taxpayers who are not yet born or of voting age, and also reduces the fiscal options available to future policy makers. Of course, future residents will benefit from the infrastructure that was built with the borrowed funds, but they will not share in the economic benefits associated with the direct expenditure of the funds (e.g., construction jobs).

### *Political Feasibility*

Voters have generally been supportive of bond measures. This is, in part, because voters may reap the benefits of the bond spending now, while deferring the costs to the future. However, the level of support can vary significantly depending upon how the bonds are explained. The poll asked the following question:

> One proposal is for the state to pay for new freeways and transit programs with general obligation bonds. These don't require a tax increase. But paying off the bonds from the state's general fund over 30 years would use money that otherwise might be spent for other state programs and services. Would you vote for or against that kind of transportation bond?

In response, only 30% of likely voters supported general obligation bonds. This was one of the lowest levels of support for the options tested. In contrast, other polls have asked questions that do not explain how bonds are paid for. In these cases, support has been much higher. For example, the Bay Area Council poll in January 2006 found that 21% of respondents would vote for all five bond measures proposed by Governor Schwarzenegger, including one for transportation, and that an additional 49% would vote for a $6 billion bond for transportation, for a total level of support of 70% (Bay Area Council, 2006). A poll conducted by the Public Policy Institute of California (PPIC) also found that 68% of likely voters would vote yes "on a state bond of about ten billion dollars for infrastructure projects such as education facilities, surface transportation, and water facilities to be paid though the state's general fund with no new taxes" (Baldassare, 2006). When PPIC asked how likely voters preferred that the state increase funding for roads and other infrastructure projects, 29% favored using only surplus budget funds, 23% supported state bonds, 20% chose increased user fees and 15% increased taxes.

The difference in poll results shows that support for bonds declines significantly when voters are told that bonds are paid for with funds that could go to other state spending priorities. When it appears the bonds are providing free money, support is much higher. Statewide bond measures of many types have passed in California, indicating that the campaigns and information proceeding the elections do not highlight the issue of where the money comes from to pay off the bonds. It is difficult to predict what campaign issues would arise if a bond for transportation were on the ballot in the near future.[19]

## Annual Appropriations of General Funds

### *Description*

General revenue is derived from undedicated general taxes and fees applied to the general public, primarily including property, income, and sales taxes. In 2003, general fund expenditures for highway purposes varied from zero for Wisconsin and South Dakota to 23.6% for Alaska (Puentes and Prince, 2003). California could decide to use general fund revenues for transportation projects, through either annual appropriations or a dedicated share of funds each year.

### *Revenue Generation*

The amount of general revenue collected by each state is significant; however, the amount of general revenue available for transportation purposes is limited due to significant demand for general revenue from competing popular public services such as education and public safety. Thus, general revenue available for transportation purposes is often dependent on infrequent and cyclical revenue surpluses.

### *Ease of Implementation*

Distribution of general revenues for transportation purposes requires legislative approval each fiscal year unless a constitutional amendment is passed by voters to dedicate a certain percentage or amount of general revenue for transportation purposes each year. Costs associated with allocation of general revenue for transportation purposes is minimal since a state budget must be constructed for each year.

### *Transportation System Performance*

Funds deposited into general revenue have no relationship with individual travel behavior and therefore provide no deterrent to traffic congestion. General improvements to the transportation system, if allocated appropriately, can result in economic benefits to society by improving the movement of consumer goods.

[19] After the research and writing for this report were completed, but before the report's release, the voters of California approved Measure 1B, a transportation bond of $19.9 billion. The measure, which had been strongly supported by leaders of both houses of the state legislature as well as by the governor and which faced no organized opposition campaign, passed by 62% on November 7, 2006.

### *Equity*

General revenues reflect the nature of the tax collection system. General revenue supported primarily by income and property tax is more progressive than revenue supported primarily by sales taxes. Transportation system users are unaware of the costs of their travel decisions if system improvements are funded through general revenue. If general revenue is used to fund transportation projects, there is not necessarily a connection between who pays for the improvements and who benefits. Overall, California's highly progressive income tax and high dependence on regressive sales taxes balance out to a mildly regressive taxation system (Institute on Taxation and Economic Policy, 2003).

### *Political Feasibility*

Voters generally support redirection of general revenue for transportation purposes in lieu of increased taxes or fees; however, redirection of general revenue becomes less popular when the transportation sector competes with other more popular public services such as public safety and education.

## SUMMARY

This section analyzed ten specific options to fund transportation at the state level through taxes and fees:

- Increasing fuel taxes
- Indexing fuel taxes to inflation
- Imposing mileage-based fees
- Increasing registration fees
- Increasing registration fees, varying based on vehicle characteristics
- Imposing a new vehicle license fee for transportation
- Imposing weight-mile fees for trucks
- Adopting a statewide sales tax
- Issuing general obligation bonds
- Appropriating general fund revenues annually

Of the ten options, all but general obligation bonds and annual appropriations of general fund revenues generate new revenue. General obligation bonds and annual appropriations use existing revenue sources, including income tax revenues, currently not dedicated to

transportation. The amount of funds from these two sources is difficult to forecast; it depends upon specific legislative proposals and action. Of the remaining eight options, revenue forecasts were developed for all but the weight-mile fee for trucks. Of these options, increasing the VLF to 1.0% (an additional 0.35%) and devoting that to transportation generates the most revenue in the year 2020 (Table 15). Increasing fuel taxes by 10¢ over ten years, indexing the fuel tax to inflation, and a 0.25% sales tax also generate substantial revenues.

**Table 15 Revenue Potential in 2020 of New or Increased Statewide Taxes and Fees**

| Tax or Fee Change | Estimated Revenues in 2020 | | Annual Revenue Growth Rate in 2020 |
|---|---|---|---|
| | Millions of 2005 Dollars | As Percent of State Fuel Tax Revenues at 2006 Rate | |
| State Fuel Tax at 2006 Rate | $2,093–$2,627 | – | –2.2% to –3.5% |
| Add 1¢/Gallon Fuel Tax Each Year for Ten Years | $1,163–$1,459 | 56% | –2.2% to –3.5% |
| Additional 6¢/Gallon Fuel Tax | $698–$876 | 33% | –2.2% to –3.5% |
| Index Existing Fuel Tax for Inflation | $1,442–$1,009 | 38%–69% | 5.9% to 6.6% |
| Replace 18¢/Gallon Fuel Tax with 1¢/Mile Mileage Fee | $401–$503 | 19% | 7.2% to 8.6% |
| Additional $31/Year Personal Vehicle Registration Fee (flat rate or varying by vehicle characteristics) | $462–$580 | 22% | –1.2% to –2.6% |
| Additional 1/4% Sales Tax | $1,465–$1,567 | 60%–70% | 0.75% to 1.1% |
| Additional 0.35% Vehicle License Fee | $1,841–$1,968 | 75%–88% | 2.8% to 3.2% |

*Sources*: Authors' projections, based on data discussed in Appendix C.

*Note*: Range of revenue options based upon low and high growth scenarios with varying population growth and inflation assumptions. See Appendix C for details.

Of these options, the VLF, sales taxes, and indexed fuel tax rate have the greatest long-term potential to generate revenue (Figure 20). This is partly because these sources do not lose value as inflation increases. Replacing the motor fuel tax with a revenue-neutral mileage fee also generates a revenue stream that grows over the long run, but for a different reason: it reflects the revenue generated by the growing gap between use of the transportation system and consumption of fuel.

In contrast, the additional revenue generated from most other fees and taxes that are raised by a set amount, such as an increase in the fuel tax or registration fee, declines over time because of inflation. The relative effectiveness of the options in generating new revenue is also determined by the amounts of increase chosen for the analysis (e.g., a 0.25% versus 0.5% sales tax). The amounts were chosen based upon a combination of anticipated political acceptance, previous proposals for increasing fees, simplicity, and ease of understanding for survey respondents.

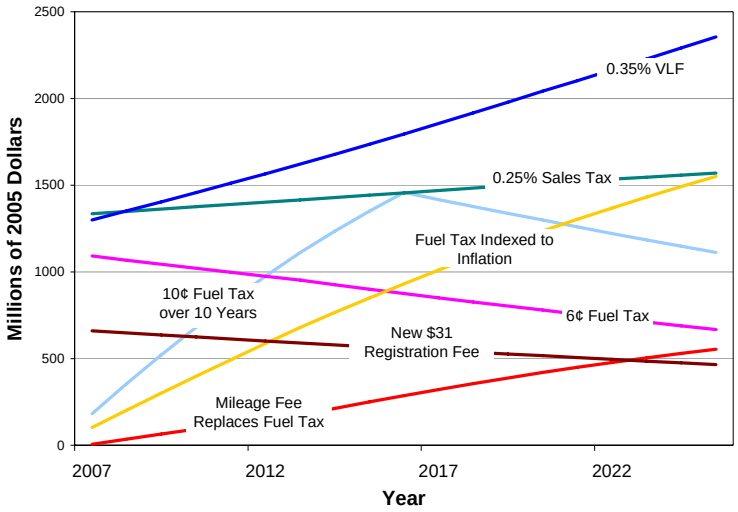


**Figure 20 Revenue Projections for Seven Options (2005 dollars)**

In addition to revenue generation, the options were evaluated using a full range of criteria. A summary of the key advantages and disadvantages of each option appears in Table 17. With the exception of the mileage fees and truck weight-mile fees, the options would all be easy to implement administratively and technically because they use existing funding mechanisms. In most cases there would be little improvement to the performance of the transportation system. The exceptions are the two types of mileage fees. This is especially true if a mileage fee varied based on congestion levels and/or vehicle characteristics, such as weight or emissions. However, a mileage-based fee that replaces the fuel tax and does not vary by vehicle type would remove the small incentive the fuel tax provides to purchase more efficient vehicles. All of the vehicle, fuel, and mileage-based fees and taxes are at least somewhat equitable in that users pay in some proportion to their use of the system and the costs they impose on the system. However, these fees are also regressive. On the other hand, general obligation bonds and annual appropriation are much more mildly regressive, because they are partially based on income tax revenues. The sales tax is perhaps the least equitable of these tax and fee options, because it is both regressive and inequitable from a user-benefits perspective.

New taxes and fees are generally not popular politically, either with voters or interest groups. The survey of California residents confirmed this (Table 16). However, it is noteworthy that increasing the fuel tax by 10¢ over ten years received support from 43% of the voters surveyed (54% against), while increasing registration fees and varying them by fuel economy or emissions received support from 45% of voters (with 51% against). Given

the recent success of a large fuel tax increase in Washington (despite poll results indicating very low levels of support), these options are worth exploring. While increasing the VLF was supported by 43% of the voters surveyed, the political history of this measure makes it riskier than other options. It is also very important to note that support for bonds varies significantly depending upon how the bonds are described.

**Table 16 Percent of Likely Voters Supporting Statewide Tax and Fee Options**

| Revenue Option | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Add 1¢/Gallon Fuel Tax Each Year for Ten Years | 43 | 54 | 3 |
| Index Existing Fuel Tax for Inflation | 28 | 66 | 6 |
| Replace 18¢/Gallon Fuel Tax with 1¢/Mile Mileage Fee | 23 | 72 | 5 |
| Additional $31/Year Personal Vehicle Registration Fee | 34 | 63 | 3 |
| Additional $31/Year Personal Vehicle Registration Fee, Varying by Fuel Economy or Emissions | 45 | 51 | 4 |
| Additional 1/2¢ Sales Tax [a] | 40 | 57 | 3 |
| Additional 0.35% Vehicle License Fee | 42 | 53 | 5 |
| General Obligation Bonds | 30 | 56 | 14 [b] |

a. Survey asked about 1/2¢ sales tax, while revenue projections are for 1/4¢ tax.
b. Response included "Maybe/Depends" and "Don't Know." Maybe/depends was an option for the general obligation bond question, but not other questions.

## Table 17 Key Advantages and Disadvantages of Tax and Fee Options

| Option | Advantages | Disadvantages |
|---|---|---|
| Increase fuel tax by 10¢ over ten years | • Very high revenue generation<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received)<br>• Easy to implement | • Politically unpopular, though smaller increase may be feasible |
| Index the fuel tax to inflation rate | • Very high revenue generation<br>• Stabilizes revenue stream relative to inflation<br>• Supports state's environmental goals by encouraging purchase of fuel efficient vehicles<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Very unpopular with voters |
| Mileage-based fee replaces fuel tax | • Addresses long term question of fuel tax viability<br>• Could improve system performance if fees vary by vehicle type, time of day, or location of travel<br>• User fee (drivers pay in proportion to costs imposed on system and benefits received) | • Difficult to implement<br>• Could reduce incentive to purchase fuel efficient vehicles if fees did not vary by vehicle type<br>• Strong opposition from many interests |
| Increase registration fee by $31 | • High revenue generation<br>• Stable, predictable source<br>• Easy to implement | • Low voter support |
| Increase registration fee, varying by mileage or emissions | • High revenue generation<br>• Supports state's environmental goals<br>• Good voter support, relative to other taxes or fees | |
| Raise VLF by 0.35% | • Very high revenue generation<br>• Revenues increase with inflation | • Highly charged political issue |
| Weight-mile fees for trucks | • Vehicles pay in proportion to costs imposed on system | • Strong political opposition likely<br>• Would require new system |
| Statewide sales tax | • Very high revenue generation<br>• More popular with voters than other taxes | • Regressive<br>• Taxpayers do not pay in proportion to how much they use the transportation system or the costs they impose on the system |
| General obligation bonds | • Historically popular with voters | • Does not generate new revenue<br>• Commits future general revenue<br>• Taxpayers do not pay in proportion to how much they use the transportation system or the costs they impose on the system |
| Annual appropriations of general fund revenues | • Progressive, if income tax revenues used | • Unpredictable revenues<br>• Taxpayers do not pay in proportion to how much they use the transportation system or the costs they impose on the system |

# CONCLUSIONS

California faces many challenges in maintaining and expanding its transportation infrastructure to meet current and future demands in its growing economy. Generating a stable, core source of revenue is a central one of those challenges. This evaluation considered several options for generating such revenue at the state level:

- Toll roads and lanes
- Truck-only toll lanes
- Privatized rest areas
- Public-private partnerships
- Increased fuel taxes by a fixed amount
- Fuel taxes indexed to inflation
- Mileage-based fees
- Vehicle registration fees
- Vehicle license fees
- Weight-mile taxes
- Statewide sales tax
- General revenue sources: bonds or annual appropriations

Looking at each option with respect to revenue generation, ease of implementation, impact on the performance of the transportation system, equity, and political feasibility reveal the obvious—there is no easy solution. However, there are some promising options that can address the state's priorities and the concerns of its citizens.

## RETAINING A CENTRAL STATE ROLE

As early as 1895, the State of California has provided for a formal system of transportation to, between, and from various points within the state in order to foster economic development and interregional connectivity. The early version of Caltrans, the Bureau of Highways Commission, sought to establish a network of over 14,000 miles of roads within the state at the turn of the twentieth century. In the 1970s, the Department of Transportation (Caltrans) was formed to support a broader range of services to the state, including public transportation, aeronautics, and transportation planning. The California

Transportation Commission was also formed at this time to provide guidance and oversee the future development of the state's multimodal interstate transportation system.

Today, the state's roles in the transportation system still reflect the broadened scope and vision of the newly formed Department of Transportation in the 1970s. In fact, the complexity of today's transportation planning and funding may require greater coordination than ever before. Specifically, the roles of the state government in transportation planning include:

- Fostering economic development through the provision of a dependable and efficient system of interregional highways, roads, and rail for the rapid movement of people and goods;
- Providing equity between different regions in the state by allocating transportation funds where they provide the greatest benefit for the state's people and economy, as a whole; and
- Promoting an efficient and sustainable transportation system through incentives and grants to local governments for complying with statewide environmental and planning goals that are best addressed at the state level.

Some infrastructure, such as state highways and projects spanning many regions, must be planned at the state level. The benefits of such projects accrue to the state, as a whole, by attracting business to California and enhancing mobility for the traveling public. Moreover, counties and regions may not be willing to increase local taxes more to maintain a state highway system whose benefits accrue beyond their boundaries.

In terms of geographic equity, rural counties have large road systems but small populations and tax bases, and they are especially hard pressed to raise money independently. Agriculture in rural counties is vital to the economy of the state, and the state's transportation system plays a key role in that economy. Similarly, inner city urban areas require improved infrastructure to provide access to new jobs.

The state also plays a valuable role in setting guidelines and priorities for how funds are spent, helping to manage the transportation system so that it functions effectively as a statewide network. For example, the state has an interest in ensuring goods movement between regions and beyond. In addition, California has made commitments to environmental goals, such as greenhouse gas reduction, for which state-level action is necessary. One of the most effective ways to ensure that state interests are addressed is to offer state funds to projects that meet state objectives.

The state gas tax was established in 1923 to fund road and highway construction and has remained as the primary source of state revenues since then. However, as the efficacy of the gas tax to fund the state's transportation responsibilities wanes in the face of inflation, rising costs of asphalt and land acquisition, and changes in automobile technologies, lawmakers must decide whether or not to advance these state roles into the future by ensuring a stable and adequate level of revenues. Options available to lawmakers include providing regional governments with greater latitude in raising their own revenues, promoting private investments in transportation infrastructure through public-private partnerships, or pursuing enhancements to the state's revenue sources to maintain adequate levels of funding. The state may pursue any one or a combination of these options to ensure adequate levels of mobility and promote economic development throughout the state.

Specifically, local governments are much more constrained than the state in how they raise funds. Unless the state grants local governments much greater flexibility in their taxing power, they may not have the ability to compensate for shrinking state funds.

Private investment in transportation infrastructure has grown in recent years in response to legislation and continues to contribute to an enhanced transportation system. However, such investments have been limited to the most profitable intraregional corridors. Expansion of private investment and tolling authority requires cooperation between state lawmakers and those corporations able and interested in providing financing. One challenge includes gaining public acceptance of user fees for new facilities on an otherwise "free" road network.

Lastly, by ensuring the adequacy of future state transportation revenues, the state will be able to fulfill its historic responsibilities of fostering economic development, ensuring equity in the prioritization of transportation, and promoting an efficient and sustainable transportation system.

## Planning for the Future: Crafting a Multiphase Approach

Addressing current and future funding shortfalls will require a multiphase approach, looking at short-, medium-, and long-term options. In the long term, fuel taxes will lose much of their power as high efficiency or alternative-fuel vehicles become more common. And even in the short term, the state barely has sufficient revenues to maintain and operate the current system, with little money available for improvements. California could consider a multiphased approach to building a healthier financing system. In the next year

or two, decision makers could identify easy-to-implement, politically feasible measures that also fare well under the equity and transportation system efficiency criteria. However, other finance and revenue options will make more sense for the medium and long terms. As economic conditions, transportation technologies, and political realities change with time, measures that look unacceptable today may become inevitable choices. In crafting a comprehensive strategy for each time frame, a sensible strategy might be to pursue a variety of strategies at once, given the substantial amount of funds needed and the reluctance for large tax or fee increases.

Some of options examined here may provide revenues in the near term. These are options with relatively strong political appeal that would require no new administrative apparatus to implement. Of the tax and fee options considered, voters were most supportive of raising vehicle registration fees if the rate varied according to the vehicle's emissions or fuel economy. Nearly two-thirds of voters agreed that fees should take into account how much a vehicle pollutes, with lesser support for linking the fees to fuel economy. Raising registration fees by an average of just $31, a modest amount, could raise a significant amount of revenue—about 20% of the amount raised by fuel taxes. In addition, it would be easy to administer and could be adopted through state legislation without requiring a popular vote. One way to raise support for the measure would be to designate the new revenue for specified programs that the public values. Voters seem most supportive of spending money to reduce congestion and maintain local streets, with slightly more support for focusing on transit than roads and highways.

Raising gas taxes by a modest amount could yield significant revenue. A 6¢ increase would increase current fuel tax revenues by about a third. The State of Washington's recent success in raising its state gas tax by 9.5¢ per gallon suggests this strategy has potential. There, a coalition of various interests that included large businesses was one key to success, and another was stating clearly what projects the tax would fund. Other national polls also find support for increasing fuel taxes if the increases are tied to policy outcomes, such are reducing global warming or dependence on foreign oil. Despite general antitax sentiments, 43% of voters supported increasing the gas tax by 1¢ per year over ten years. A more modest increase, such as 5¢ or 6¢, might be acceptable to a majority of voters.

General obligation (GO) bonds could be a source of funds in the near term, repaid by general revenues in the future. General obligation bonds do not generate new revenue, since they must be paid off by future tax revenues, thus reducing funds for other state programs. Also, general obligation bonds do not generate any of the transportation system efficiencies associated with some other revenue options. However, voters have generally

been supportive of bond financing in California, although the survey found low levels of support when voters were told that the bonds would be paid off with money that otherwise might be spent on other state programs and services—30% for and 56% opposed. The success of any bond measure in the near term would depend on many political factors. General obligation bond financing for transportation also goes against the traditional funding principle of having users pay for the system in proportion to their use of the system.

In both the near and medium term, public-private partnerships and tolled facilities have strong potential to help fund new infrastructure in certain locations. Such funding mechanisms can be used to build and maintain the new facilities, but generally do not generate revenue for maintaining and operating existing roads and transit. Therefore, they should not be viewed as a comprehensive, long-term solution to the state's transportation needs. Throughout the state and among many different demographic groups, voters are supportive of turning existing underused carpool lanes into high-occupancy toll (HOT) lanes. Overall, 56% of voters supported favored HOT lanes, while 41% opposed them. HOT lanes have been implemented already in California, with positive responses, experience that will make it easier to gain public acceptance for additional projects. Implementing HOT lanes would require little new infrastructure and in some locations could be implemented relatively quickly. Revenue generation would be modest because of the limited number of possible applications. In addition, revenues may need to be spent in the corridor where the lane is located to ensure political and public acceptance. Voters were less supportive of new highways being tolled, though support increased if they knew the tolls would speed up construction and would be removed after paying off the debt. Voters were about equally split (46% in favor and 48% opposed) on the idea of express lanes—tolled lanes adjacent to existing free highways. Such facilities may have enough support in certain congested regions or corridors. Both HOT lanes and express lanes address one of the equity concerns raised about toll facilities, in that lower-income drivers have a free option and do not have to pay the toll.

Truck-only toll lanes are another medium-term option. The potential safety and congestion benefits and cost savings of separating heavy trucks from light vehicles could make these a good option for ensuring efficient goods movement and reducing deadly accidents. Voters were very supportive (62%) of this concept if trucks were required to use them.

There is potential for new public-private partnerships in the transportation arena. Voters seem open to the idea of private companies building and operating toll facilities,

particularly with state oversight. Voters were also very supportive of the idea of privatizing rest stops (71% in favor), though this option would generate very little revenue and faces some administrative and regulatory hurdles.

Several of the tax and fee options may be viable in the medium or long term. For example, despite the recent, highly publicized rollback of the VLF in 2003, 42% of voters surveyed supported increasing the annual VLF from 0.65% to 1.0% of a vehicle's value (53% opposed this). Such an increase would raise more revenue than any of the other options examined in this report, raising as much revenue as the state gas tax at its current rate. This funding source has a key advantage of increasing with inflation, since it is tied to the value of vehicles. Also, the fee requires no new administrative structure. And, despite recent political debates, 42% of voters supported the idea of increasing the vehicle license fee (VLF) from 0.65% to 1.0%. However, the VLF has a volatile political history that makes considering changes to it very difficult. Because they receive revenues from the current VLF, local governments would likely oppose dedicating an increase in the fee to transportation. Increasing the VLF and dedicating the increase to transportation would require at least several years' effort to build coalitions and educate decision makers.

Long-term solutions that address fundamental changes in the transportation system and vehicle fleet will likely require significant shifts in attitudes and approaches. One alternative attracting growing interest among transportation experts is replacing fuel taxes with a mileage-based fee. An advantage of a mileage-fee approach is that it charges road users in rough proportion to the benefits they receive from driving and the cost of providing them with road infrastructure, while also capturing revenue from the growing number of alternative fuel vehicles that pay little or no fuel taxes. For these reasons, mileage fees are worth exploring further, despite the low levels of public support at the moment and concerns regarding the implementation of such a system. Three pilot projects are currently underway in the U.S. to test the technical feasibility of mileage-based taxation systems.

## Crafting Revenue and Finance Strategies to Address Californians' Concerns

One important aspect of gaining support for new transportation revenues will be to design approaches that mesh with the interests of voters. Three promising avenues suggest themselves.

First, the survey showed that voters are interested in variable fees and taxes that are higher for vehicles that have more negative environmental and energy consumption impacts. A full 64% of voters indicated support for varying registration fees based on a vehicle's pollution level, while only 33% opposed this. Nationwide polls and research in other states confirms public support for linking transportation-related taxes and fees to environmental objectives. If decision makers decide to raise fees and taxes, they may want to link the increase to environmental objectives to increase public acceptance.

A second strategy is to designate new revenues for programs that voters support. Although linking revenues to specific projects limits the state's ability to react flexibly as new needs arise, designating revenues for program categories may satisfy voters without limiting decision makers' ability to plan and spend revenues where they are most needed. The survey showed that voters want investment in all types of transportation infrastructure, including highways, local streets, and transit. When asked what types of spending were a high priority, reducing traffic congestion on freeways and highways proved to be a high priority for the largest numbers. Building new road and freeway capacity was a lower priority. The higher premium placed on reducing congestion than building freeways may indicate that voters are most concerned with improving the performance of the system, rather than the specific solutions. Any new revenue programs and efforts to gain public support may want to focus on performance outcomes. However, failure to meet these performance objectives may jeopardize future public support. Finally, transit was also a high priority for many voters; when they were asked if the government should prioritize transit or streets and highways, slightly more voters selected transit. These results suggest that designating new revenue for transit programs may boost popular support.

Finally, regional solutions may be a feasible complement to state revenue sources. The survey confirmed recent experience with local option sales taxes, which shows that voters like the concept of local control of revenue. Also, some options failed to gain statewide support, but were popular in a few regions. Because many transportation problems and solutions are local or regional in scope, increasing the options for raising funds at a local or regional level is a sensible option to fill some funding gaps. In addition, the survey found that a majority of voters think that ballot measures to raise transportation funds should require a 50% or 55% majority, rather than a 67% majority, as is the case for local sales taxes. The state's leaders may wish to further investigate public interest in changing the constitution to allow local transportation sales tax measures to pass with a 55% majority. Finally, the legislature may wish to allow more counties to pass local registration fee supplements to fund transportation services.

## INCREASING KNOWLEDGE AND UNDERSTANDING

The transportation system is complex and ever changing. The system to fund it may be even more misunderstood, by everyone involved. The stakeholder interviews conducted for this project revealed genuine concern that the public does not understand how the system works and how it is funded. There was a belief or hope that if people did learn more about how California funds its transportation system, they would support measures to increase funding or else to switch from current funding sources to new ones that achieve better transportation system efficiency. Increasing the level of knowledge and understanding among the general public about the transportation system is a challenging task that will require sustained and creative effort. The state could start by building upon the efforts begun with Go California.

Outreach to decision makers at all levels may be more feasible in the near term and at least equally important. Topics of particular importance include: the equity implications of various funding tools; the amount of revenue generated in the long and near term from various tools; and the historical importance of core funding principles, including user fees.

With the challenges ahead for California and its infrastructure, increasing the levels of knowledge among all involved parties will be necessary. Adding more transparency to the system and engaging all parties in dialogue about finance options is important. Several states, such as Washington, have implemented visible performance measure programs that add to overall understanding and transparency. Given that the survey found greater interest in improving the performance of the system, rather than for specific infrastructure improvements, a focus on performance measures may be useful.

Finally, some long-term funding options, such as mileage fees and truck-only toll lanes, require more research and evaluation of implementation strategies and impacts on equity and system performance. Caltrans has been a leader among state DOTs in promoting research and has the capability to contribute to these future evaluations.

State leaders face a daunting task to secure sufficient revenues to support California's transportation infrastructure over the next decades. They will need to sift through dozens of revenue and financing options to identify the ones that have strong revenue potential, promote state objectives such as reducing congestion and improving environmental quality, and also are acceptable to political stakeholders and the public. Despite the challenges, there are several promising solutions. This study identifies a set of options that can meet those criteria and allow California to maintain a high-quality transportation infrastructure that will support its citizens and businesses into the twenty-first century.

# APPENDIX A: SURVEY RESULTS

## INTRODUCTION

The project included two surveys of California residents to assess levels of acceptance for various revenue mechanisms. The first survey (Survey 1) focused on traditional revenue options, including taxes and fees, in addition to tolls and general obligation bonds. The survey also asked several questions about the respondents' opinions on transportation as a problem for the community at large or for them personally, the importance of increasing transportation funding, and spending priorities. The survey also collected standard demographic information and some information on the person's transportation options. Appendix J contains the complete text of Survey 1. To collect additional information on public-private partnerships (PPP), a second, shorter survey (Survey 2) included more detailed questions about tolling and PPPs. This survey included some of the same questions as the first, and the results showed that the two sample populations were comparable. Appendix K contains the complete text of Survey 2.

The first, a survey of over 2,700 residents, focused on people's views about the need to raise transportation revenues and their preferences for different options to raise transportation revenues through new or augmented statewide taxes and fees. The second poll asked over 800 residents their views on raising revenues through charging user fees on specific facilities such as tolled highways, and on incorporating public-private partnerships into these plans

## METHODOLOGY

For the first survey, the Survey and Policy Research Institute (SPRI) at San José State University, directed by Phil Trounstine, surveyed a random sample of 2,705 California adults by telephone from January 9 to 27, 2006. The statistical margin of error at the 95% confidence level is ±1.9% for all adults and ±2.2% for likely voters. The margin of error is greater for smaller geographic and demographic groupings. For the second survey, SPRI surveyed a random sample of 815 adults by telephone from March 20 to 24, 2006. The margin of error for adults is ±3.4% and for likely voters it is ±4.2%.

Both surveys were conducted in English and Spanish. Selection at the household level was managed by asking to speak to the youngest male present and, if none was available, then the oldest female. Survey data were weighted slightly for gender and region to match the 2000 U.S. Census, as well as for gender, region, and political party to match the California Secretary of State's Statement of Registration. The data presented in the tables in this appendix are weighted.

## FINDINGS

### General Opinions

Both surveys asked standard questions about whether the respondent thought things in California and their region were generally going in the right direction. In both surveys, about half of all adults and voters thought the state was off on the wrong track (Table 18). Respondents had more favorable opinions about their region (Table 19). While a majority of adults and voters think that the quality of the transportation system is a problem for them, only a small share think that it is the most important problem facing the state (Table 20 and Table 21).

**Table 18 Things on the Right or Wrong Track in California (Survey 1, Q1 and Survey 2, Q1)**

**Question:** To begin with, do you think things in California are generally going in the right direction or are they seriously off on the wrong track?

| Response | Survey 1 | | Survey 2 | |
|---|---|---|---|---|
| | Adults (%) | Likely Voters (%) | Adults (%) | Likely Voters (%) |
| Right direction | 39 | 38 | 37 | 36 |
| Wrong track | 48 | 51 | 50 | 52 |
| Don't know | 13 | 11 | 14 | 12 |
| Total | 100 | 100 | 100[a] | 100 |
| *n* | 2705 | 1950 | 815 | 557 |

a. Original survey data totals 100%; values in this column do not total 100% due to rounding error.

## Table 19 Things on the Right or Wrong Track in Respondent's Region (Survey 1, Q2)

**Question**: How about in your region? Are things generally headed in the right direction or are they seriously off on the wrong track?

| Response | Adults (%) | Likely Voters (%) |
|---|---|---|
| Right direction | 53 | 53 |
| Wrong track | 39 | 40 |
| Don't know | 9 | 7 |
| Total | 100[a] | 100 |
| *n* | 2705 | 1950 |

a. Original survey data totals 100%; values in this column do not total 100% due to rounding error.

## Table 20 Most Important Issue Facing California Today (Survey 1, Q3)

**Question**: Thinking about the state as a whole, what in your opinion is the most important issue facing people in California today? (Presented to the respondent as an open-ended question.)

| Respondent Preference | Adults (%) | Likely Voters (%) |
|---|---|---|
| Education, schools, teachers | 19 | 19 |
| Economy, jobs, unemployment | 19 | 19 |
| Immigration, illegal immigration | 11 | 13 |
| Housing costs, housing availability | 7 | 8 |
| Traffic, transportation, mass transit | 7 | 6 |
| State budget, deficit, taxes | 7 | 7 |
| Health care, health costs, HMO reform | 6 | 7 |
| Crime, gangs, drugs | 4 | 3 |
| Gasoline prices | 2 | 2 |
| Environment, pollution | 2 | 3 |
| Overpopulation/overcrowding | 2 | 2 |
| Electricity costs, supply/energy crisis | 1 | 1 |
| Other | 7 | 7 |
| Don't know | 6 | 4 |
| Total | 100 | 100[a] |
| *n* | 2705 | 1950 |

a. Original survey data totals 100%; values in this column do not total 100% due to rounding error.

**Table 21 Personal Impact of Transportation System Quality (Survey 1, Q4 and Survey 2, Q2)**

**Question**: Compared to other issues that may affect you, how much of a problem is the quality of the transportation system for you personally? Would you say it's a big problem, somewhat of a problem, not much or a problem, or no problem at all?

| Response | Survey 1 | | Survey 2 | |
|---|---|---|---|---|
| | Adults (%) | Likely Voters (%) | Adults (%) | Likely Voters (%) |
| Big problem | 30 | 29 | 24 | 26 |
| Somewhat of a problem | 26 | 26 | 30 | 30 |
| Not much of a problem | 21 | 22 | 22 | 24 |
| No problem at all | 21 | 22 | 22 | 19 |
| Don't know | 2 | 1 | 2 | 1 |
| Total | 100 | 100 | 100 | 100 |
| *n* | 2705 | 1950 | 815 | 557 |

## General Opinions on Transportation Funding

As is often found in public opinion surveys, respondents want the government to spend more on transportation, but think they already pay enough or too much in taxes. Respondents were about evenly split between thinking that the level of state and local taxes they pay is too high or about right (Table 22). However, more than half think that state and local governments spend too little on transportation (Table 23).

Respondents were asked about their priorities for government investment in transportation. Reducing traffic congestion was the highest priority of respondents, followed by maintaining local streets and roads (Figure 21). Expanding and improving transit was a high priority for 56% of respondents, slightly lower than the level of support for expanding and improving freeways and highways (62% of all adults and 61% of voters). However, when asked if government should focus its spending more on improving and expanding roads and highways or mass transit, voters favored transit (Table 24).

Respondents generally support the idea of linking fees to the pollution a vehicle emits, but not to the distance driven. Respondents were also asked a series of general principle questions about whether taxes and fees should be assessed based upon how much people drive, their vehicle's fuel economy, or their vehicle's emissions. Nearly two-thirds of respondents supported the idea that registration fees should take into account the amount the vehicle pollutes (Table 27). In contrast, less than 40% thought taxes and fees should vary by the amount of driving (Table 25), and just under half thought fees should take into account gas mileage (Table 26).

The survey also asked whether respondents approve or disapprove of the job Caltrans is doing. Just under half approve, though a significant share—one-fifth—don't know and about one-third disapprove (Table 28).

**Table 22 Satisfaction with Level of State and Local Taxes (Survey 1, Q5)**

| **Question**: Would you say the level of state and local taxes you pay is too high, too low, or just about right? | | |
|---|---|---|
| **Response** | **Adults (%)** | **Likely Voters (%)** |
| Too high | 45 | 45 |
| Too low | 6 | 7 |
| About right | 44 | 45 |
| Don't know | 5 | 4 |
| Total | 100 | 100 [a] |
| *n* | 2705 | 1950 |

a. Original survey data totals 100%; values in this column do not total 100% due to rounding error.

**Table 23 Satisfaction with Level of Funds Allocated to Transportation (Survey 1, Q6)**

| **Question**: Given that state and local governments in California have to divide their budgets among many competing needs, would you say that government spends too much, too little or about the right amount on transportation? | | |
|---|---|---|
| **Response** | **Adults (%)** | **Likely Voters (%)** |
| Too much | 9 | 8 |
| Too little | 57 | 59 |
| About the right amount | 19 | 19 |
| Don't know | 14 | 14 |
| Total | 100[a] | 100 |
| *n* | 2705 | 1950 |

a. Original survey data totals 100%; values in this column do not total 100% due to rounding error.

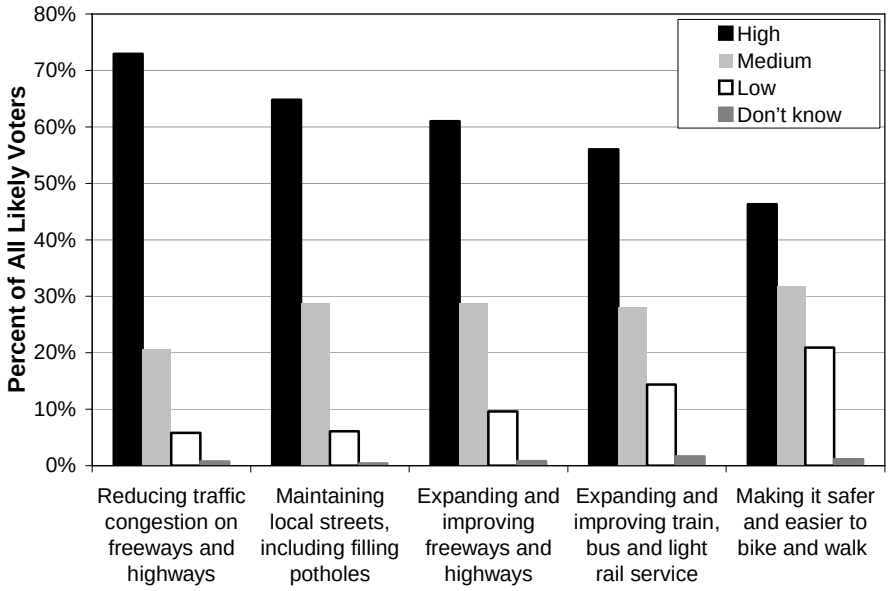


**Figure 21 Voter Preferences for Government Investment in Transportation**

## Table 24 Support for Government Spending on Roads or Mass Transit (Survey 1, Q15)

**Question**: Generally speaking, do you think government funds spent on transportation should focus more on improving and expanding the system of roads and highways we have? Or do you think government funds should focus more on improving and expanding mass transit like trains, light rail, and buses?

| Respondent Preference | Adults (%) | Likely Voters (%) |
|---|---|---|
| Focus on roads and highways | 38 | 38 |
| Focus on mass transit | 40 | 42 |
| Both | 19 | 17 |
| Neither | 1 | 1 |
| Don't know | 2 | 2 |
| Total | 100 | 100 |
| *n* | 2705 | 1950 |

*Note*: The difference between focusing on roads/highways vs. mass transit is statistically significant ($p<0.05$) for likely voters, but not for all polled adults.

## Table 25 Support for Miles-Driven Based Vehicle Fees (Survey 1, Q12)

**Question**: As a general principle, do you think the amount people pay in taxes and fees used to pay for transportation projects should take into account how much they drive on California roads and highways? In other words, should people who drive more pay more in taxes and fees? Or should taxes and fees used to pay for transportation projects be pretty much the same for everyone, regardless of how much they drive?

| Respondent Preference | Adults (%) | Likely Voters (%) |
|---|---|---|
| Take into account how much people drive | 37 | 40 |
| Should be the same for everyone | 58 | 56 |
| Don't know | 5 | 5 |
| Total | 100 | 100 |
| *n* | 2705 | 1950 |

*Note*: Figures may not total 100% due to rounding.

## Table 26 Support for Fuel-Economy Based Vehicle Registration (Survey 1, Q13)

**Question**: Generally speaking, should the fees that people pay to register their vehicles take into account the gasoline mileage those vehicles achieve? That is, should the fees be lower for vehicles that get more miles per gallon, and higher for vehicles that get fewer miles per gallon?

| Respondent Preference | Adults (%) | Likely Voters (%) |
|---|---|---|
| Should take into account fuel economy | 48 | 49 |
| Shouldn't take into account fuel economy | 46 | 47 |
| Don't know | 6 | 4 |
| Total | 100 | 100 |
| *n* | 2705 | 1950 |

## Table 27 Support for Emission-Level Based Vehicle Registration (Survey 1, Q14)

**Question**: As a general principle, should the fees that people pay to register their vehicles take into account the amount of pollution those vehicles emit? That is, should the fees be lower for vehicles that emit less air pollution, and higher for vehicles that emit more air pollution?

| Respondent Preference | Adults (%) | Likely Voters (%) |
|---|---|---|
| Should take into account fuel economy | 63 | 64 |
| Shouldn't take into account fuel economy | 33 | 33 |
| Don't know | 4 | 3 |
| Total | 100 | 100 |
| *n* | 2705 | 1950 |

**Table 28 Approval Rating of Caltrans (Survey 1, Q26)**

| **Question**: Do you approve or disapprove of the job Caltrans is doing managing the state's transportation system? | | |
|---|---|---|
| **Respondent Approval Rating** | **Adults (%)** | **Likely Voters (%)** |
| Approve | 47 | 47 |
| Disapprove | 33 | 33 |
| Don't know | 21 | 20 |
| Total | 100 | 100 |
| *n* | 2705 | 1950 |
| *Note*: Figures may not total 100% due to rounding. | | |

## Opinions on Specific Funding Mechanisms: Survey 1

The tables on the following pages include detailed results for ten different funding options:

- Increasing the gas tax 1¢ per year over ten years (Table 30)
- Indexing the gas tax to inflation (Table 31)
- Replacing the gas tax with a mileage fee (Table 32)
- Increasing the vehicle registration fee to $62 (Table 33)
- Increasing the vehicle registration fee to an average of $62, with fees varying by fuel economy or emissions (Table 34)
- Increasing the existing vehicle license fee from 0.65% to 1.0% (Table 35)
- Adding a 1/2¢ statewide sales tax (Table 36)
- Issuing general obligation bonds (Table 37)
- Creating toll lanes (Table 38)
- Creating HOT lanes (Table 39)

Table 29 shows the statewide results for the measures examined in both surveys. Only one of the measures from Survey 1 received support from a majority of voters—converting underused carpool lanes to HOT lanes (Table 29). Four of the measures received support from at least 40% of voters: increasing the gas tax by 10¢ over ten years; increasing the registration fee from $31 to $62, with fees varying according to the vehicle's fuel economy or emissions; introducing a new 1/2¢ state sales tax for transportation; and increasing the VLF to 1.0%. Indexing the gas tax to inflation and replacing it with a mileage-based fee received the least support. Discussion of these overall results appears in the third and fourth sections of the report.

There are some significant differences in level of support by geography. Voters in Southern California were less supportive of the 10¢ gas tax increase, but more supportive of new toll lanes. Voters in the Bay Area were often more supportive of raising fees or taxes, including the 10¢ gas tax, registration fees, and the VLF.

Demographic differences are also apparent. For all of the measures, there were significant differences of opinion between men and women. However, this was often due to a higher share of women not having an opinion. The only differences by race were for the increases to the registration fees. White voters were more supportive of the flat increase (38%). Perhaps more interesting was that 50% of Asian voters supported a registration fee increase that varied by fuel economy or emissions, followed by 46% support from white voters (Table 34). Varying the fee by fuel economy or emissions increased levels of support for all races/ethnicities.

With respect to age, older voters were more supportive of higher gas taxes, while younger voters were more supportive of a sales tax increase and HOT lanes. Voters with college degrees and higher incomes were often more supportive of tax and fee increases. An exception was a sales tax increase. College graduates and higher income voters were less supportive of a 1/2¢ sales tax, though the difference was not statistically significant.

Transit users and those who think the state should focus spending more on transit were also generally more supportive of tax and fee increases.

## Table 29 Comparison of Likely Voter Support for Revenue Options

| Revenue Option | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| **Survey 1 (Q16 through Q24)** | | | |
| Add 1¢/Gallon Fuel Tax Each Year for Ten Years | 43 | 54 | 3 |
| Index Existing Fuel Tax for Inflation | 28 | 66 | 6 |
| Replace 18¢/Gallon Fuel Tax with 1/Mile Mileage Fee | 23 | 72 | 5 |
| Additional $31/Year Personal Vehicle Registration Fee | 34 | 63 | 4 |
| Additional $31/Year Personal Vehicle Registration Fee, Varying by Fuel Economy or Emissions | 45 | 51 | 4 |
| Additional 1/2¢ Sales Tax [a] | 41 | 57 | 3 |
| Additional 0.35% Vehicle License Fee | 42 | 53 | 5 |
| GO Bonds | 30 | 56 | 14[b] |
| Tolls on New Highway Lanes | 36 | 59 | 5 |
| Converting Carpool Lanes to HOT Lanes | 56 | 41 | 3 |
| **Survey 2 (Q3 through Q12)** | | | |
| New Toll Roads | 44 | 51 | 5 |
| Express Toll Lanes Alongside Existing Highways | 47 | 48 | 6 |
| Truck-Only Toll Lanes that Trucks Must Use | 62 | 33 | 5 |
| Privatized Rest Areas | 71 | 24 | 5 |

a. Survey asked about 1/2¢ sales tax, while revenue projections are for 1/4¢ tax.
b. Response includes "maybe/depends" and "don't know."

## Table 30 Support by Likely Voters for Increasing the Gas Tax by 1¢ per Year for Ten Years (Survey 1, Q16)

**Question**: One idea is to increase the 18¢/gallon state gas tax by 1¢/year for ten years. Would you vote for or against such a measure?

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 43 | 54 | 3 |
| **North/South** | | | |
| **North** | **46** | **51** | **4** |
| **South** | **41** | **57** | **2** |
| **Region** | | | |
| **Bay Area** | **53** | **42** | **5** |
| **Los Angeles** | **44** | **55** | **2** |
| **Other Southern California** | **40** | **58** | **2** |
| **Central Valley** | **38** | **59** | **4** |
| **Central Coast** | **39** | **57** | **4** |
| **Rural** | **44** | **55** | **1** |
| **Gender** | | | |
| **Men** | **47** | **51** | **2** |
| **Women** | **39** | **57** | **4** |
| Race | | | |
| White | 45 | 52 | 3 |
| Latino | 38 | 59 | 3 |
| Asian | 43 | 53 | 3 |
| Black | 38 | 60 | 3 |
| **Age** | | | |
| **18–34 years** | **40** | **55** | **5** |
| **35–54 years** | **43** | **55** | **2** |
| **55+ years** | **46** | **52** | **3** |
| **Education** | | | |
| **Less than college graduate** | **38** | **59** | **3** |
| **College graduate** | **47** | **50** | **3** |
| **Income** | | | |
| **Less than $50,000** | **39** | **57** | **4** |
| **$50,000–$100,000** | **41** | **56** | **2** |
| **Over $100,000** | **52** | **47** | **2** |
| **Transit Use** | | | |
| **Used transit in last month** | **52** | **43** | **5** |
| **Has not used transit** | **40** | **57** | **2** |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 43 | 54 | 3 |
| Drives 100 or more miles per week | 44 | 54 | 3 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 40 | 57 | 3 |
| Not much or no problem | 45 | 52 | 3 |
| **Spending priority** | | | |
| **Focus on highways** | **37** | **61** | **2** |
| **Focus on transit** | **49** | **48** | **3** |
| **Both** | **43** | **52** | **5** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region are significant at $p<0.05$.

## Table 31 Support by Likely Voters for Indexing the Gas Tax to Inflation (Survey 1, Q16a)

**Question**: Another idea is to index the gas tax to inflation. Under this proposal, the gas tax could increase slightly each year based upon inflation. For example, in 2004, inflation in California was about 3%, so the tax would have gone up by about 1/2¢ per gallon. Would you vote for or against a proposal to index the gas tax to inflation?

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 28 | 66 | 6 |
| North/South | | | |
| North | 31 | 64 | 5 |
| South | 26 | 68 | 6 |
| Region | | | |
| Bay Area | 34 | 60 | 5 |
| Los Angeles | 39 | 65 | 6 |
| Other Southern California | 24 | 70 | 6 |
| Central Valley | 27 | 68 | 5 |
| Central Coast | 24 | 69 | 7 |
| Rural | 28 | 68 | 4 |
| **Gender** | | | |
| **Men** | **31** | **65** | **4** |
| **Women** | **26** | **67** | **7** |
| Race | | | |
| White | 28 | 66 | 6 |
| Latino | 24 | 70 | 6 |
| Asian | 35 | 59 | 6 |
| Black | 27 | 69 | 5 |
| **Age** | | | |
| **18–34 years** | **30** | **62** | **8** |
| **35–54 years** | **27** | **70** | **3** |
| **55+ years** | **29** | **64** | **7** |
| **Education** | | | |
| **Less than college graduate** | **26** | **67** | **7** |
| **College graduate** | **30** | **66** | **5** |
| **Income** | | | |
| **Less than $50,000** | **29** | **64** | **7** |
| **$50,000–$100,000** | **27** | **68** | **5** |
| **Over $100,000** | **33** | **64** | **3** |
| **Transit Use** | | | |
| **Used transit in last month** | **36** | **57** | **7** |
| **Has not used transit** | **26** | **69** | **5** |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 29 | 66 | 5 |
| Drives 100 or more miles per week | 27 | 68 | 5 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 28 | 66 | 6 |
| Not much or no problem | 28 | 67 | 5 |
| **Spending priority** | | | |
| **Focus on highways** | **23** | **73** | **5** |
| **Focus on transit** | **35** | **60** | **5** |
| **Both** | **25** | **66** | **9** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 32 Support by Likely Voters for Replacing the Gas Tax with a Mileage Fee (Survey 1, Q17)

**Question**: One idea (another idea) is to eliminate the 18¢/gallon gas tax altogether and replace it with a so-called "mileage fee" based on the number of miles a vehicle is driven. Each driver would pay a fee of 1¢/mile for every mile driven within the state. For example, every 100 miles driven would incur a mileage fee of $1. Each vehicle would be equipped with an electronic means to keep track of miles driven and the fee would be paid at the pump when drivers buy gas.

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 23 | 72 | 5 |
| North/South | | | |
| North | 23 | 72 | 5 |
| South | 23 | 72 | 5 |
| Region | | | |
| Bay Area | 22 | 72 | 7 |
| Los Angeles | 24 | 71 | 5 |
| Other Southern California | 22 | 73 | 5 |
| Central Valley | 23 | 72 | 4 |
| Central Coast | 21 | 74 | 6 |
| Rural | 23 | 74 | 3 |
| **Gender** | | | |
| **Men** | **24** | **73** | **4** |
| **Women** | **22** | **72** | **7** |
| Race | | | |
| White | 22 | 74 | 5 |
| Latino | 23 | 71 | 6 |
| Asian | 27 | 65 | 8 |
| Black | 26 | 69 | 5 |
| Age | | | |
| 18–34 years | 27 | 68 | 5 |
| 35–54 years | 22 | 74 | 4 |
| 55+ years | 21 | 73 | 6 |
| Education | | | |
| Less than college graduate | 23 | 72 | 6 |
| College graduate | 23 | 73 | 5 |
| Income | | | |
| Less than $50,000 | 26 | 68 | 7 |
| $50,000–$100,000 | 23 | 74 | 4 |
| Over $100,000 | 22 | 74 | 4 |
| Transit Use | | | |
| Used transit in last month | 24 | 70 | 6 |
| Has not used transit | 22 | 73 | 5 |
| **Weekly Driving** | | | |
| **Drives less than 100 miles per week** | **25** | **69** | **7** |
| **Drives 100 or more miles per week** | **22** | **75** | **4** |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 21 | 73 | 6 |
| Not much or no problem | 24 | 71 | 5 |
| **Spending priority** | | | |
| **Focus on highways** | **23** | **73** | **4** |
| **Focus on transit** | **25** | **71** | **5** |
| **Both** | **19** | **73** | **8** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region are significant at $p<0.05$.

## Table 33 Support by Likely Voters for Increasing the Vehicle Registration Fee (Survey 1, Q18)

**Question**: One idea (another idea) is to increase the vehicle registration fee to $62 per year per vehicle, from its current level of $31. Would you support or oppose that proposal?

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 34 | 63 | 4 |
| North/South | | | |
| North | 35 | 61 | 4 |
| South | 33 | 64 | 3 |
| **Region** | | | |
| **Bay Area** | **42** | **55** | **3** |
| **Los Angeles** | **32** | **66** | **2** |
| **Other Southern California** | **34** | **62** | **4** |
| **Central Valley** | **28** | **68** | **4** |
| **Central Coast** | **33** | **64** | **4** |
| **Rural** | **32** | **59** | **9** |
| **Gender** | | | |
| **Men** | **37** | **61** | **2** |
| **Women** | **30** | **65** | **5** |
| **Race** | | | |
| **White** | **38** | **59** | **3** |
| **Latino** | **27** | **70** | **4** |
| **Asian** | **27** | **70** | **4** |
| **Black** | **23** | **75** | **2** |
| Age | | | |
| 18–34 years | 30 | 67 | 3 |
| 35–54 years | 34 | 63 | 3 |
| 55+ years | 36 | 59 | 4 |
| **Education** | | | |
| **Less than college graduate** | **28** | **69** | **3** |
| **College graduate** | **38** | **58** | **4** |
| **Income** | | | |
| **Less than $50,000** | **28** | **67** | **5** |
| **$50,000–$100,000** | **34** | **64** | **2** |
| **Over $100,000** | **47** | **51** | **2** |
| Transit Use | | | |
| Used transit in last month | 37 | 59 | 4 |
| Has not used transit | 33 | 64 | 4 |
| **Weekly Driving** | | | |
| **Drives less than 100 miles per week** | **29** | **68** | **4** |
| **Drives 100 or more miles per week** | **38** | **59** | **3** |
| **How much of a problem is the quality of the transportation system for you?** | | | |
| **Big or somewhat** | **30** | **66** | **4** |
| **Not much or no problem** | **37** | **60** | **3** |
| **Spending priority** | | | |
| **Focus on highways** | **29** | **67** | **3** |
| **Focus on transit** | **39** | **58** | **3** |
| **Both** | **31** | **65** | **4** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region are significant at $p<0.05$.

## Table 34 Support by Likely Voters for Raising the Vehicle Registration Fee and Varying the Rate by Emissions and Fuel Economy (Survey 1, Q18a)

**Question**: Another option is to increase the vehicle registration fee to an AVERAGE of $62 per year for all vehicle owners, but vary the fee according to how much pollution the vehicle emits and how much gas mileage it gets. Vehicles that emit more pollution or get lower gas mileage would pay HIGHER fees and those that emit less pollution or get better gas mileage would pay LOWER fees.

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 45 | 51 | 4 |
| **North/South** | | | |
| **North** | **47** | **49** | **5** |
| **South** | **43** | **54** | **3** |
| **Region** | | | |
| **Bay Area** | **54** | **42** | **5** |
| **Los Angeles** | **44** | **53** | **3** |
| **Other Southern California** | **45** | **53** | **2** |
| **Central Valley** | **40** | **55** | **5** |
| **Central Coast** | **41** | **55** | **4** |
| **Rural** | **36** | **58** | **6** |
| **Gender** | | | |
| **Men** | **45** | **53** | **2** |
| **Women** | **44** | **50** | **5** |
| **Race** | | | |
| **White** | **47** | **50** | **4** |
| **Latino** | **38** | **58** | **4** |
| **Asian** | **50** | **44** | **6** |
| **Black** | **39** | **58** | **3** |
| Age | | | |
| 18–34 years | 49 | 48 | 3 |
| 35–54 years | 44 | 52 | 3 |
| 55+ years | 44 | 52 | 5 |
| **Education** | | | |
| **Less than college graduate** | **40** | **56** | **5** |
| **College graduate** | **49** | **48** | **3** |
| **Income** | | | |
| **Less than $50,000** | **42** | **52** | **5** |
| **$50,000–$100,000** | **45** | **52** | **3** |
| **Over $100,000** | **51** | **47** | **2** |
| **Transit Use** | | | |
| **Used transit in last month** | **54** | **41** | **5** |
| **Has not used transit** | **42** | **55** | **4** |
| **Weekly Driving** | | | |
| **Drives less than 100 miles per week** | **48** | **48** | **4** |
| **Drives 100 or more miles per week** | **43** | **54** | **3** |
| **How much of a problem is the quality of the transportation system for you?** | | | |
| **Big or somewhat** | **42** | **55** | **3** |
| **Not much or no problem** | **47** | **49** | **5** |
| **Spending priority** | | | |
| **Focus on highways** | **37** | **59** | **3** |
| **Focus on transit** | **54** | **43** | **3** |
| **Both** | **41** | **54** | **6** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 35 Support by Likely Voters for Increasing the Vehicle License Fee to 1% (Survey 1, Q19)

**Question**: One idea (another idea) is to raise the vehicle license fee to 1%. The vehicle license fee is currently 0.65% of your vehicle's value, so the new fee would be 1%, with the additional revenue dedicated to transportation purposes. Would you vote for or against such a proposal?

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 42 | 53 | 5 |
| **North/South** | | | |
| **North** | **43** | **51** | **7** |
| **South** | **42** | **55** | **4** |
| Region | | | |
| Bay Area | 46 | 47 | 7 |
| Los Angeles | 43 | 53 | 3 |
| Other Southern California | 41 | 55 | 3 |
| Central Valley | 39 | 56 | 5 |
| Central Coast | 45 | 51 | 5 |
| Rural | 39 | 55 | 7 |
| **Gender** | | | |
| **Men** | **44** | **53** | **3** |
| **Women** | **41** | **53** | **6** |
| Race | | | |
| White | 43 | 52 | 5 |
| Latino | 43 | 52 | 5 |
| Asian | 46 | 52 | 3 |
| Black | 40 | 57 | 3 |
| **Age** | | | |
| **18–34 years** | **43** | **52** | **5** |
| **35–54 years** | **43** | **54** | **3** |
| **55+ years** | **43** | **51** | **7** |
| **Education** | | | |
| **Less than college graduate** | **40** | **56** | **4** |
| **College graduate** | **45** | **50** | **5** |
| Income | | | |
| Less than $50,000 | 45 | 49 | 7 |
| $50,000–$100,000 | 44 | 52 | 4 |
| Over $100,000 | 47 | 50 | 3 |
| Transit Use | | | |
| Used transit in last month | 43 | 51 | 5 |
| Has not used transit | 42 | 53 | 5 |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 43 | 53 | 5 |
| Drives 100 or more miles per week | 43 | 53 | 4 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 43 | 53 | 5 |
| Not much or no problem | 43 | 53 | 5 |
| **Spending priority** | | | |
| **Focus on highways** | **37** | **59** | **3** |
| **Focus on transit** | **54** | **43** | **3** |
| **Both** | **41** | **54** | **6** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 36 Support by Likely Voters for 1/2¢ Sales Tax Increase (Survey 1, Q20)

**Question**: One idea (another idea) is to adopt a 1/2¢ increase in the statewide sales tax. Would you support or oppose a 1/2¢ increase in the statewide sales tax for transportation projects?

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 41 | 57 | 3 |
| North/South | | | |
| North | 43 | 55 | 3 |
| South | 39 | 59 | 2 |
| Region | | | |
| Bay Area | 39 | 58 | 3 |
| Los Angeles | 39 | 58 | 3 |
| Other Southern California | 40 | 58 | 2 |
| Central Valley | 45 | 53 | 3 |
| Central Coast | 36 | 63 | 2 |
| Rural | 48 | 47 | 4 |
| **Gender** | | | |
| **Men** | **41** | **58** | **1** |
| **Women** | **40** | **56** | **4** |
| Race | | | |
| White | 40 | 57 | 3 |
| Latino | 46 | 51 | 3 |
| Asian | 42 | 56 | 3 |
| Black | 44 | 55 | 1 |
| **Age** | | | |
| **18–34 years** | **47** | **50** | **3** |
| **35–54 years** | **38** | **60** | **2** |
| **55+ years** | **42** | **55** | **3** |
| Education | | | |
| Less than college graduate | 43 | 54 | 3 |
| College graduate | 39 | 59 | 3 |
| Income | | | |
| Less than $50,000 | 45 | 53 | 2 |
| $50,000–$100,000 | 41 | 57 | 2 |
| Over $100,000 | 42 | 56 | 2 |
| Transit Use | | | |
| Used transit in last month | 44 | 54 | 2 |
| Has not used transit | 40 | 58 | 3 |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 40 | 57 | 3 |
| Drives 100 or more miles per week | 41 | 57 | 2 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 40 | 58 | 3 |
| Not much or no problem | 41 | 56 | 2 |
| **Spending priority** | | | |
| **Focus on highways** | **36** | **62** | **2** |
| **Focus on transit** | **44** | **54** | **2** |
| **Both** | **42** | **54** | **5** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region are significant at $p<0.05$.

## Table 37 Support by Likely Voters for General Obligation Bonds for Transportation (Survey 1, Q24)

**Question:** One proposal is for the state to pay for new freeways and transit programs with general obligation bonds. These don't require a tax increase. But paying off the bonds from the state's general fund over 30 years would use money that otherwise might be spent for other state programs and services.

| Respondent Category | For (%) | Against (%) | Depends (%) | Don't Know (%) |
|---|---|---|---|---|
| Statewide | 30 | 56 | 6 | 7 |
| North/South | | | | |
| North | 30 | 56 | 7 | 8 |
| South | 31 | 57 | 6 | 7 |
| Region | | | | |
| Bay Area | 25 | 59 | 7 | 8 |
| Los Angeles | 34 | 54 | 6 | 6 |
| Other Southern California | 28 | 60 | 5 | 6 |
| Central Valley | 35 | 51 | 9 | 6 |
| Central Coast | 31 | 53 | 6 | 10 |
| Rural | 33 | 53 | 6 | 8 |
| **Gender** | | | | |
| **Men** | **34** | **56** | **6** | **5** |
| **Women** | **27** | **57** | **7** | **9** |
| Race | | | | |
| White | 29 | 58 | 7 | 6 |
| Latino | 34 | 53 | 4 | 9 |
| Asian | 35 | 47 | 8 | 10 |
| Black | 38 | 53 | 5 | 5 |
| **Age** | | | | |
| **18–34 years** | **32** | **51** | **6** | **11** |
| **35–54 years** | **31** | **57** | **6** | **6** |
| **55+ years** | **30** | **57** | **7** | **6** |
| Education | | | | |
| Less than college graduate | 31 | 55 | 6 | 8 |
| College graduate | 30 | 57 | 6 | 7 |
| Income | | | | |
| Less than $50,000 | 27 | 59 | 6 | 8 |
| $50,000–$100,000 | 31 | 56 | 6 | 7 |
| Over $100,000 | 33 | 56 | 7 | 4 |
| Transit Use | | | | |
| Used transit in last month | 32 | 55 | 7 | 6 |
| Has not used transit | 30 | 57 | 6 | 7 |
| Weekly Driving | | | | |
| Drives less than 100 miles per week | 29 | 57 | 7 | 8 |
| Drives 100 or more miles per week | 32 | 56 | 6 | 7 |
| How much of a problem is the quality of the transportation system for you? | | | | |
| Big or somewhat | 31 | 55 | 6 | 7 |
| Not much or no problem | 30 | 57 | 6 | 7 |
| **Spending priority** | | | | |
| **Focus on highways** | **34** | **54** | **5** | **7** |
| **Focus on transit** | **27** | **61** | **6** | **6** |
| **Both** | **31** | **47** | **11** | **10** |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 38 Support by Likely Voters for Tolls on New Highway Lanes (Survey 1, Q22)

**Question**: One way to pay for new highway lanes is to charge tolls for using them. Do you support or oppose the idea of collecting tolls from drivers using NEW highway lanes?

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 36 | 59 | 5 |
| **North/South** | | | |
| **North** | **36** | **59** | **5** |
| **South** | **44** | **53** | **4** |
| **Region** | | | |
| **Bay Area** | **37** | **58** | **5** |
| **Los Angeles** | **41** | **55** | **4** |
| **Other Southern California** | **45** | **53** | **3** |
| **Central Valley** | **37** | **58** | **5** |
| **Central Coast** | **47** | **50** | **3** |
| **Rural** | **30** | **65** | **6** |
| **Gender** | | | |
| **Men** | **40** | **58** | **2** |
| **Women** | **41** | **53** | **6** |
| Race | | | |
| White | 42 | 54 | 4 |
| Latino | 35 | 62 | 4 |
| Asian | 39 | 58 | 3 |
| Black | 43 | 55 | 2 |
| Age | | | |
| 18–34 years | 40 | 56 | 3 |
| 35–54 years | 42 | 55 | 3 |
| 55+ years | 39 | 55 | 6 |
| Education | | | |
| Less than college graduate | 40 | 55 | 5 |
| College graduate | 41 | 56 | 4 |
| **Income** | | | |
| **Less than $50,000** | **36** | **70** | **5** |
| **$50,000–$100,000** | **41** | **56** | **3** |
| **Over $100,000** | **46** | **52** | **3** |
| Transit Use | | | |
| Used transit in last month | 40 | 56 | 4 |
| Has not used transit | 40 | 56 | 4 |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 40 | 56 | 4 |
| Drives 100 or more miles per week | 41 | 55 | 4 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 42 | 54 | 4 |
| Not much or no problem | 39 | 56 | 5 |
| Spending priority | | | |
| Focus on highways | 39 | 57 | 4 |
| Focus on transit | 44 | 53 | 4 |
| Both | 37 | 57 | 6 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 39 Support by Likely Voters for Allowing Solo Drivers to Use HOV Lanes for a Fee (Survey 1, Q23)

**Question**: Another idea is to open underused carpool lanes to solo drivers who are willing to pay a toll, and to use the money collected to improve transportation. Do you support or oppose that idea?

| Respondent Category | For (%) | Against (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 56 | 41 | 3 |
| North/South | | | |
| North | 54 | 42 | 4 |
| South | 57 | 40 | 3 |
| Region | | | |
| Bay Area | 53 | 42 | 5 |
| Los Angeles | 57 | 40 | 3 |
| Other Southern California | 60 | 37 | 3 |
| Central Valley | 54 | 45 | 2 |
| Central Coast | 50 | 45 | 5 |
| Rural | 56 | 39 | 6 |
| **Gender** | | | |
| **Men** | **54** | **44** | **3** |
| **Women** | **58** | **38** | **4** |
| Race | | | |
| White | 55 | 42 | 3 |
| Latino | 60 | 38 | 3 |
| Asian | 50 | 44 | 6 |
| Black | 61 | 38 | 1 |
| **Age** | | | |
| **18–34 years** | **64** | **34** | **2** |
| **35–54 years** | **58** | **39** | **2** |
| **55+ years** | **50** | **45** | **5** |
| Education | | | |
| Less than college graduate | 58 | 39 | 4 |
| College graduate | 54 | 43 | 3 |
| **Income** | | | |
| **Less than $50,000** | **55** | **41** | **4** |
| **$50,000–$100,000** | **61** | **37** | **3** |
| **Over $100,000** | **53** | **45** | **2** |
| Transit Use | | | |
| Used transit in last month | 57 | 40 | 4 |
| Has not used transit | 55 | 41 | 3 |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 56 | 40 | 4 |
| Drives 100 or more miles per week | 56 | 41 | 2 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 57 | 40 | 3 |
| Not much or no problem | 55 | 42 | 3 |
| Spending priority | | | |
| Focus on highways | 57 | 40 | 3 |
| Focus on transit | 55 | 41 | 4 |
| Both | 56 | 40 | 4 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

**Table 40 Percentage Vote that Should Be Required for Funding Measures (Survey 1, Q25)**

**Question**: If any measures to raise funds for transportation appear on the ballot, what percentage of the vote should be required for their approval? 50%, like most issues; 55%, like education bonds, or 67%, like local sales taxes?

| Required Voter Approval Level | Adults (%) | Likely Voters (%) |
|---|---|---|
| 50% | 29 | 29 |
| 55% | 27 | 26 |
| 67% | 34 | 36 |
| Other | 3 | 2 |
| Don't know | 8 | 6 |
| Total | 100 | 100 |
| *n* | 2705 | 1950 |

## Detailed Opinions on Tolls and PPPs: Survey 2

The second survey asked a series of questions focused on tolled facilities and public-private partnerships (PPPs). The sample size was smaller, with only 558 voters. Therefore, some groups of respondents are too small to report their results separately, including the central coast and rural areas in the regions category, and Asian and black voters in the race category. There were less than 40 respondents in each of these four groups. Table 41 summarizes the results.

The survey asked respondents if they generally supported or opposed building new toll roads, explaining that the tolls would pay back money borrowed to build the road without increasing taxes. About half (51%) of voters were moderately or strongly opposed to this option, with 44% moderately or strongly in support (Table 42). Women were generally more supportive, with 40% of men in strong opposition. Perhaps unexpectedly, levels of opposition were highest in the middle income category ($50,000–$100,000), not the lowest income category (these differences were significant at $p<0.07$).

There were three follow-up questions that offered additional options to gauge how levels of support might change. First, respondents were asked "If state officials said a needed highway would be built many years sooner as a toll road than as a regular freeway, would that make you more or less likely to support building the highway as a toll road?" Overall, 48% of voters said this would make them more likely to support tolls. Perhaps more importantly, of those who moderately opposed toll roads, 40% said this would make them more likely to support tolls roads (Table 43). The option was particularly appealing to Hispanic and younger voters (Table 46). About one-third of respondents stated that this

information would make them less likely to support toll roads. This group may include voters who generally oppose expanding freeways.

The second follow-up question asked, "If state officials said the tolls charged for using the highway would be eliminated once the highway was paid for, would that make you more or less likely to support building the highway as a toll road?" In this case, about 60% of voters were more likely to support toll roads, including 59% of those who moderately opposed toll roads (Table 44). This option seems to appeal slightly more to voters in the middle-income category (Table 46), where opposition rates were higher.

Finally, respondents were asked "What if the tolls charged for using the highway weren't eliminated, but were also used to pay for other needed transportation improvements in the same region? Would that make you more likely or less likely to support building the highway as a toll road?" About half of the voters (49%) said this would make them less likely to support tolls roads, while only 37% said it would make them more likely to support toll roads.

Respondents were presented with a specific option of building new freeway lanes alongside existing highways and charging a toll for those new lanes (express lanes). Voters were about evenly split on this option (Table 47). Voters in Southern California were more supportive, likely due to their experiences with toll roads in Orange and Riverside Counties. Women were less decisive about this option, with 9% answering "don't know." Hispanics were more supportive (57%), as were younger (18–34 years) voters (63%).

There was more support for the concept of truck-only toll lanes next to existing freeways, with 62% of voters statewide supporting this idea (Table 48). In the option described, trucks would be required to use the lanes. This likely increased support. Support was significantly higher among women voters, Hispanic voters (83%), and younger (18–34 years) voters (71%).

Voters appear somewhat comfortable with private companies building and operating toll roads, particularly if the state limits tolls and profits. One question asked about the concept of toll roads being built and maintained by private companies that could earn a profit versus the state. Overall, 46% favored the state, 39% favored private companies, and 10% wanted neither (Table 49). There were no statistically significant difference in opinions between the groups analyzed. A follow-up question of those who preferred that the state build the toll roads found that one quarter opposed private companies building toll roads and 71% just preferred that the state do it (Table 50). Another question asked if respondents would support allowing private companies to build and operate toll roads is

the tolls and profits were limited by the state. In this case, 71% of voters supported this option.

Respondents were also supportive of the idea of private companies renting some rest-stop areas. Specifically, the question asked:

> Currently, the state highway department—Caltrans—manages the rest-stop areas along the highways. One idea for improving rest stops and raising funds for highway programs is to let Caltrans rent some rest-stop areas to private companies. Those companies would maintain the free restrooms and parking, and in exchange they could build and operate convenience stores, gas stations or restaurants in those rest areas. Would you support or oppose that idea?

Over 70% of voters supported this idea, with high levels of support from all groups (Table 52).

**Table 41 Summary of Likely Voters' Opinions on Tolls and PPPs (Survey 2)**

| Option | Support (%) | Oppose (%) | Don't Know (%) |
|---|---|---|---|
| New toll roads | 44 | 51 | 5 |
| Express toll lanes alongside existing highways | 47 | 48 | 6 |
| Truck-only toll lanes that trucks must use | 62 | 33 | 5 |
| Privatized rest areas | 71 | 24 | 5 |

## Table 42 Support by Likely Voters for Toll Roads (Survey 2, Q3)

**Question**: One option for building new highway projects without increasing taxes is to borrow money to build the road, charge tolls for driving on the new highway, and use the money collected to pay back the loans and maintain the highway. Do you generally support or oppose building new toll roads?

| Respondent Category | Strong Support (%) | Moderate Support (%) | Moderate Opposition (%) | Strong Opposition (%) | Don't Know (%) |
|---|---|---|---|---|---|
| Statewide | 21 | 23 | 18 | 32 | 5 |
| North/South | | | | | |
| North | 15 | 23 | 22 | 34 | 6 |
| South | 26 | 23 | 16 | 31 | 5 |
| Region | | | | | |
| Bay Area | 13 | 25 | 26 | 34 | 3 |
| Los Angeles | 29 | 20 | 16 | 32 | 2 |
| Other Southern California | 27 | 24 | 14 | 29 | 7 |
| Central Valley | 22 | 22 | 19 | 29 | 9 |
| **Gender** | | | | | |
| **Men** | **19** | **19** | **18** | **40** | **3** |
| **Women** | **24** | **26** | **18** | **25** | **7** |
| Race | | | | | |
| White | 21 | 23 | 18 | 33 | 5 |
| Hispanic | 27 | 22 | 22 | 27 | 4 |
| Age | | | | | |
| 18–34 years | 23 | 21 | 21 | 32 | 2 |
| 35–54 years | 21 | 22 | 22 | 33 | 3 |
| 55+ years | 22 | 24 | 13 | 33 | 8 |
| Education | | | | | |
| Less than college graduate | 20 | 22 | 19 | 32 | 6 |
| College graduate | 22 | 23 | 18 | 33 | 4 |
| Income | | | | | |
| Less than $50,000 | 21 | 24 | 18 | 28 | 10 |
| $50,000–$100,000 | 17 | 21 | 21 | 37 | 4 |
| Over $100,000 | 27 | 26 | 16 | 28 | 3 |
| Transit Use | | | | | |
| Used transit in last month | 24 | 26 | 17 | 30 | 3 |
| Has not used transit | 21 | 22 | 19 | 33 | 6 |
| Weekly Driving | | | | | |
| Drives less than 100 miles per week | 17 | 28 | 21 | 31 | 3 |
| Drives 100 or more miles per week | 22 | 21 | 18 | 35 | 4 |
| How much of a problem is the quality of the transportation system for you? | | | | | |
| Big or somewhat | 24 | 19 | 16 | 35 | 6 |
| Not much or no problem | 19 | 27 | 21 | 30 | 4 |

**Note**: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$. Differences between income groups and "how much of a problem…" groups are significant at $p<0.07$.

## Table 43 Support by Likely Voters for Tolls If Highway Built Sooner (Survey 2, Q4)

**Question**: If state officials said a needed highway would be built many years sooner as a toll road than as a regular freeway, would that make you more or less likely to support building the highway as a toll road?

| Response | Do you generally support or oppose building new toll roads? | | | | | |
|---|---|---|---|---|---|---|
| | Strong Support (%) | Moderate Support (%) | Moderate Opposition (%) | Strong Opposition (%) | Don't Know (%) | Overall (%) |
| More likely | 77 | 73 | 40 | 17 | 48 | 48 |
| Less likely | 14 | 14 | 34 | 65 | 10 | 34 |
| No difference | 7 | 9 | 23 | 13 | 21 | 13 |
| Don't know | 3 | 3 | 3 | 5 | 21 | 5 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |
| *n* | 119 | 127 | 102 | 181 | 29 | 558 |

**Note**: Figures may not total 100% due to rounding.

## Table 44 Support by Likely Voters for Tolls If Eliminated Once Highway Paid For (Survey 2, Q5)

**Question**: If state officials said the tolls charged for using the highway would be eliminated once the highway was paid for, would that make you more or less likely to support building the highway as a toll road?

| Response | Do you generally support or oppose building new toll roads? | | | | | |
|---|---|---|---|---|---|---|
| | Strong Support (%) | Moderate Support (%) | Moderate Opposition (%) | Strong Opposition (%) | Don't Know (%) | Overall (%) |
| More likely | 80 | 79 | 59 | 35 | 52 | 60 |
| Less likely | 13 | 12 | 28 | 49 | 30 | 28 |
| No difference | 6 | 5 | 12 | 14 | 11 | 10 |
| Don't know | 2 | 4 | 2 | 2 | 7 | 3 |
| Total | 100 [a] | 100 | 100[a] | 100 | 100 | 100 [a] |
| *n* | 120 | 126 | 102 | 182 | 27 | 557 |

a. Original survey data totals 100%; values in this column do not total 100% due to rounding error.

## Table 45 Support by Likely Voters for Spending Toll Revenues for Regional Transportation Improvements (Survey 2, Q6)

**Question**: What if the tolls charged for using the highway were not eliminated, but were also used to pay for other needed transportation improvements in the same region? Would that make you more likely or less likely to support building the highway as a toll road?

| Response | Do you generally support or oppose building new toll roads? | | | | | |
|---|---|---|---|---|---|---|
| | Strong Support (%) | Moderate Support (%) | Moderate Opposition (%) | Strong Opposition (%) | Don't Know (%) | Overall (%) |
| More likely | 53 | 54 | 37 | 17 | 25 | 37 |
| Less likely | 34 | 34 | 52 | 68 | 46 | 49 |
| No difference | 8 | 6 | 7 | 13 | 7 | 9 |
| Don't know | 5 | 6 | 4 | 2 | 21 | 5 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |
| *n* | 118 | 127 | 101 | 181 | 28 | 555 |

**Note**: Figures may not total 100% due to rounding.

## Table 46 Summary of Options to Increase Support for Toll Roads among Opponents (Likely Voters) (Survey 2, Q4 through Q6)

**Question**: *Asked of those who oppose toll roads.* Would you be more likely to support toll roads if:
1. the highway would be built many years sooner;
2. tolls were eliminated once the highway was paid for;
3. tolls were also used to pay for other needed transportation projects in the region?

| Respondent Category | % of those who oppose tolls roads who are more likely to support toll roads if… | | |
|---|---|---|---|
| | 1. Highway built sooner (%) | 2. Tolls eliminated after road paid for (%) | 3. Tolls used for other projects (%) |
| Statewide | 26 | 44 | 24 |
| North/South | | | |
| North | 27 | 46 | 21 |
| South | 25 | 41 | 27 |
| Regions | | | |
| Bay Area | 32 | 46 | 22 |
| Los Angeles | 21 | 48 | 26 |
| Other Southern California | 30 | 36 | 32 |
| Central Valley | 27 | 47 | 27 |
| Gender | | | |
| Men | 26 | 42 | 20 |
| Women | 25 | 44 | 29 |
| Race | | | |
| White | 22 | 40 | 19 |
| Hispanic | 39 | 53 | 35 |
| Age | | | |
| 18–34 years | 38 | 54 | 36 |
| 35–54 years | 27 | 47 | 27 |
| 55+ years | 17 | 33 | 15 |
| Education | | | |
| Less than college graduate | 25 | 44 | 25 |
| College graduate | 26 | 44 | 24 |
| Income | | | |
| Less than $50,000 | 25 | 39 | 27 |
| $50,000–$100,000 | 27 | 47 | 28 |
| Over $100,000 | 22 | 43 | 22 |

*Note*: No significant differences between groups within each category.

## Table 47 Support by Likely Voters for Tolled New Lanes on Existing Highways (Survey 2, Q7)

**Question**: Another option is building new freeway lanes alongside existing highways and charging a toll to drivers who use those new lanes? Do you support or oppose that idea?

| Respondent Category | Support (%) | Oppose (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 47 | 48 | 5 |
| **North/South** | | | |
| **North** | **40** | **52** | **8** |
| **South** | **51** | **45** | **4** |
| Region | | | |
| Bay Area | 45 | 47 | 8 |
| Los Angeles | 53 | 44 | 3 |
| Other Southern California | 51 | 44 | 5 |
| Central Valley | 38 | 54 | 7 |
| Gender | | | |
| Men | 48 | 50 | 3 |
| Women | 45 | 47 | 9 |
| **Race** | | | |
| **White** | **42** | **52** | **6** |
| **Hispanic** | **57** | **37** | **6** |
| **Age** | | | |
| **18–34 years** | **63** | **36** | **1** |
| **35–54 years** | **47** | **48** | **6** |
| **55+ years** | **39** | **53** | **7** |
| Education | | | |
| Less than college graduate | 44 | 51 | 5 |
| College graduate | 49 | 46 | 6 |
| Income | | | |
| Less than $50,000 | 45 | 50 | 5 |
| $50,000–$100,000 | 46 | 48 | 7 |
| Over $100,000 | 54 | 42 | 4 |
| Transit Use | | | |
| Used transit in last month | 49 | 49 | 3 |
| Has not used transit | 46 | 48 | 6 |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 43 | 52 | 6 |
| Drives 100 or more miles per week | 49 | 46 | 6 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 47 | 49 | 5 |
| Not much or no problem | 47 | 47 | 6 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 48 Support by Likely Voters for Tolled New Truck Lanes on Existing Highways (Survey 2, Q8)

**Question**: There are proposals in some congested regions to build new toll lanes for trucks right next to existing freeways. Trucks would be required to use there toll lanes instead of the regular freeway. Would you support or oppose toll lanes for trucks?

| Respondent Category | Support (%) | Oppose (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 62 | 33 | 5 |
| North/South | | | |
| North | 59 | 34 | 7 |
| South | 65 | 32 | 4 |
| Region | | | |
| Bay Area | 63 | 30 | 7 |
| Los Angeles | 67 | 29 | 4 |
| Other Southern California | 64 | 33 | 3 |
| Central Valley | 53 | 43 | 4 |
| **Gender** | | | |
| **Men** | **56** | **40** | **4** |
| **Women** | **68** | **26** | **6** |
| **Race** | | | |
| **White** | **58** | **37** | **5** |
| **Hispanic** | **83** | **14** | **2** |
| **Age** | | | |
| **18–34 years** | **71** | **29** | **0** |
| **35–54 years** | **60** | **35** | **5** |
| **55+ years** | **60** | **31** | **8** |
| Education | | | |
| Less than college graduate | 60 | 35 | 5 |
| College graduate | 65 | 31 | 5 |
| Income | | | |
| Less than $50,000 | 67 | 30 | 2 |
| $50,000–$100,000 | 62 | 33 | 5 |
| Over $100,000 | 62 | 34 | 4 |
| Transit Use | | | |
| Used transit in last month | 63 | 33 | 5 |
| Has not used transit | 62 | 33 | 5 |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 67 | 30 | 3 |
| Drives 100 or more miles per week | 61 | 35 | 5 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 62 | 32 | 6 |
| Not much or no problem | 62 | 35 | 3 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 49 Preference of Likely Voters for Public vs. Private New Toll Roads (Survey 2, Q9)

**Question**: There are two ways to build toll roads. One is to have the state borrow the money to build the road and then use the tolls to pay back the debt. Another way is to let a private company build and maintain the road and use the tolls to pay off its investment and earn a profit. If a new toll road is going to be built, which would you prefer? To have the state build and operate it or to have a private company build and operate it? Asked of likely voters.

| Respondent Category | The State (%) | Private company (%) | Neither (%) | Don't Know (%) |
|---|---|---|---|---|
| Statewide | 46 | 39 | 10 | 5 |
| North/South | | | | |
| North | 44 | 36 | 13 | 7 |
| South | 48 | 41 | 8 | 4 |
| Region | | | | |
| Bay Area | 42 | 39 | 16 | 4 |
| Los Angeles | 45 | 42 | 9 | 4 |
| Other Southern California | 50 | 38 | 7 | 4 |
| Central Valley | 43 | 39 | 10 | 9 |
| Gender | | | | |
| Men | 47 | 37 | 12 | 4 |
| Women | 45 | 40 | 9 | 6 |
| Race | | | | |
| White | 45 | 38 | 11 | 6 |
| Hispanic | 51 | 40 | 2 | 7 |
| Age | | | | |
| 18–34 years | 50 | 40 | 5 | 5 |
| 35–54 years | 47 | 38 | 11 | 4 |
| 55+ years | 45 | 37 | 11 | 7 |
| Education | | | | |
| Less than college graduate | 46 | 39 | 9 | 6 |
| College graduate | 46 | 39 | 10 | 4 |
| Income | | | | |
| Less than $50,000 | 52 | 34 | 5 | 10 |
| $50,000–$100,000 | 46 | 39 | 11 | 4 |
| Over $100,000 | 46 | 40 | 10 | 4 |
| Transit Use | | | | |
| Used transit in last month | 53 | 30 | 8 | 8 |
| Has not used transit | 45 | 41 | 10 | 4 |
| Weekly Driving | | | | |
| Drives less than 100 miles per week | 48 | 40 | 8 | 3 |
| Drives 100 or more miles per week | 45 | 38 | 11 | 6 |
| How much of a problem is the quality of the transportation system for you? | | | | |
| Big or somewhat | 46 | 38 | 10 | 6 |
| Not much or no problem | 47 | 39 | 10 | 5 |

*Note*: There were no significant differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

## Table 50 Follow-Up on Preference for Public vs. Private Toll Road Operation (Survey 2, Q10)

**Question**: *Asked of respondents who prefer that the state build toll roads rather than private companies.* Does that mean you oppose having new toll roads built and operated by private companies or just that you would prefer to have the state build and operate any new toll roads?

| Response Options | Response (%) |
|---|---|
| I oppose private companies building toll roads | 25 |
| I prefer to have the state do it | 71 |
| Don't know | 4 |
| Total | 100 |
| *n* | 257 |

## Table 51 Support for Private-Partnership–Operated Toll Roads—State Limited Profits (Survey 2, Q11)

**Question**: Would you support allowing private companies to build and operate toll roads if state officials said the tolls charged by those private companies and their profits would be limited by the state?

| Respondent Category | Yes (%) | No (%) | Maybe (%) | I just oppose toll roads (%) | Don't Know (%) |
|---|---|---|---|---|---|
| Statewide | 38 | 39 | 8 | 9 | 7 |
| North/South | | | | | |
| North | 35 | 42 | 6 | 10 | 7 |
| South | 40 | 36 | 9 | 8 | 8 |
| Region | | | | | |
| Bay Area | 37 | 38 | 5 | 12 | 8 |
| Los Angeles | 42 | 37 | 8 | 5 | 9 |
| Other Southern California | 41 | 32 | 10 | 10 | 8 |
| Central Valley | 35 | 42 | 9 | 9 | 5 |
| Gender | | | | | |
| Men | 40 | 38 | 6 | 11 | 5 |
| Women | 35 | 39 | 9 | 7 | 10 |
| **Race** | | | | | |
| **White** | **35** | **41** | **8** | **9** | **8** |
| **Hispanic** | **58** | **26** | **8** | **6** | **2** |
| **Age** | | | | | |
| **18–34 years** | **54** | **36** | **3** | **7** | **0** |
| **35–54 years** | **38** | **39** | **10** | **10** | **3** |
| **55+ years** | **30** | **40** | **7** | **9** | **15** |
| Education | | | | | |
| Less than college graduate | 33 | 39 | 10 | 9 | 9 |
| College graduate | 42 | 39 | 6 | 9 | 5 |
| **Income** | | | | | |
| **Less than $50,000** | **38** | **37** | **6** | **4** | **16** |
| **$50,000–$100,000** | **35** | **41** | **9** | **11** | **5** |
| **Over $100,000** | **44** | **39** | **8** | **6** | **3** |
| Transit Use | | | | | |
| Used transit in last month | 43 | 36 | 5 | 7 | 9 |
| Has not used transit | 36 | 39 | 8 | 9 | 7 |
| Weekly Driving | | | | | |
| Drives less than 100 miles per week | 32 | 42 | 6 | 11 | 10 |
| Drives 100 or more miles per week | 39 | 39 | 9 | 9 | 4 |
| How much of a problem is the quality of the transportation system for you? | | | | | |
| Big or somewhat | 40 | 34 | 8 | 10 | 7 |
| Not much or no problem | 34 | 44 | 7 | 7 | 8 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$. Asked of respondents who do not prefer to have a private company build and operate a new toll road ($n$=341).

## Table 52 Support for Private-Partnership–Managed Rest Areas (Survey 2, Q12)

**Question**: Currently, the state highway department—Caltrans—manages the rest-stop areas along the highways. One idea for improving rest stops and raising funds for highway programs is to let Caltrans rent some rest-stop areas to private companies. Those companies would maintain the free restrooms and parking, and in exchange they could build and operate convenience stores, gas stations or restaurants in those rest areas. Would you support or oppose that idea?

| Respondent Category | Support (%) | Oppose (%) | Don't Know (%) |
|---|---|---|---|
| Statewide | 71 | 24 | 5 |
| North/South | | | |
| North | 68 | 25 | 7 |
| South | 74 | 23 | 4 |
| Region | | | |
| Bay Area | 69 | 23 | 8 |
| Los Angeles | 73 | 24 | 3 |
| Other Southern California | 75 | 20 | 5 |
| Central Valley | 69 | 26 | 5 |
| Gender | | | |
| Men | 74 | 23 | 4 |
| Women | 68 | 25 | 7 |
| Race | | | |
| White | 71 | 24 | 5 |
| Hispanic | 75 | 22 | 4 |
| Age | | | |
| 18–34 years | 76 | 20 | 4 |
| 35–54 years | 73 | 22 | 5 |
| 55+ years | 67 | 26 | 6 |
| Education | | | |
| Less than college graduate | 68 | 27 | 5 |
| College graduate | 73 | 21 | 6 |
| Income | | | |
| Less than $50,000 | 73 | 21 | 6 |
| $50,000–$100,000 | 70 | 27 | 3 |
| Over $100,000 | 79 | 18 | 4 |
| Transit Use | | | |
| Used transit in last month | 68 | 29 | 4 |
| Has not used transit | 72 | 23 | 5 |
| Weekly Driving | | | |
| Drives less than 100 miles per week | 67 | 30 | 4 |
| Drives 100 or more miles per week | 73 | 22 | 6 |
| How much of a problem is the quality of the transportation system for you? | | | |
| Big or somewhat | 72 | 24 | 5 |
| Not much or no problem | 70 | 25 | 5 |

*Note*: **Bold** indicates that the differences between groups within each category (e.g., age or region) are significant at $p<0.05$.

# APPENDIX B: TRANSPORTATION REVENUE OPTIONS

A variety of transportation revenue options are either currently in use or under consideration for use in the United States. These options are presented alphabetically in Table 53.

**Table 53 Transportation Revenue Options**

| Revenue Type | Description |
|---|---|
| Assessment District | A property or business-license based fee (tax) based on location within, or proximity to, a defined infrastructure improvement area or transit center. |
| Bicycle Registration Fee | An annual or one-time fee paid to register a bicycle. |
| Development Fee | A fixed or variable exaction from a developer to mitigate the development's effect on the local transportation network. |
| Diesel Fuel Tax—Fixed | A fixed direct tax on diesel (as it leaves a refinery). This tax is paid directly by the supplier and not the consumer, unlike a sales and use tax. |
| Diesel Fuel Tax—Indexed | A variable direct tax on diesel (as it leaves a refinery) indexed to a common indicator of inflation or rising construction costs. |
| Driver's License Fee | Fees associated with services provided by the DMV, which will ultimately generate a driver's license. |
| Energy Content Tax | A tax based on the energy content of a fuel, rather than volume. |
| Gasoline Fuel Tax—Fixed | A fixed direct tax on gasoline as it leaves a refinery. This tax is paid directly by the supplier and not the consumer. |
| Gasoline Fuel Tax—Indexed | A variable direct tax on gasoline as it leaves a refinery, indexed to a common indicator of inflation or rising construction costs. |
| General Fund Revenue | The redirection of general fund revenues to a transportation purpose or away from an established transportation fund and into a general fund. |
| Highway Naming Rights | Similar to the adopt-a-highway program, this scheme allows a transportation department to name a section of a highway after individuals, businesses or organizations in order to fund transportation purposes. |
| Highway Rest Area Privatization | The leasing of public rest stops along highways to allow for commercial vending machines, fast food outlets, convenience stores, gas stations, or other service-oriented commercial use. |
| Mortgage Recording Tax | A tax paid by purchasers of property, based on mortgage amount. |
| Off-Highway Registration Fee | A registration fee applied to off-highway (recreational) vehicles. |

**Table 53 Transportation Revenue Options (Continued)**

| Revenue Type | Description |
|---|---|
| Parking Tax | A flat fee or percentage tax per parking space. |
| Payroll Tax | A tax on payrolls paid by the employer (rather than the employee), dedicated to transportation purposes. Also known as a commuter tax, since it is commonly applied to business areas adjacent to a state border. |
| Real Property Transfer Tax | A tax paid by sellers of property on the value of the property. |
| Sales Tax—Automobile-Related | A sales tax applied to the purchase of gasoline, vehicles, and vehicle parts; revenues dedicated to transportation purposes. |
| Sales Tax—General | Also known as a use and sales tax or transactions and use tax, it is applied to all qualified transactions. |
| Toll—Fixed | A fixed, direct charge on a user for access through a road, highway, bridge, etc. |
| Toll—Variable | A variable-toll fee with a direct relationship to congestion. The greater the congestion, the greater the fee and vice versa. |
| Transit Fare | Fees charged directly on the user of public transit in exchange for use of the system. |
| Transportation Utility Fee | Also known as a transportation maintenance fee, allocates a portion of the recurring roadway maintenance costs to all development located within the jurisdiction on a monthly bases. |
| Truck Registration Fees | A fixed fee paid annually in association for registering a commercial truck. |
| Truck Weight-Distance Fee | A fee based on the weight of a commercial truck and the distance traveled. |
| Value-Based Tax on Vehicles | Also known as a vehicle license fee. An annual property tax based on the value of a vehicle applied at the local (city, county or regional) level. |
| Vehicle Registration Fee | A fixed fee paid annually in association for registering a noncommercial vehicle applied at the local, county, regional, or state level. |
| Vehicle Rental Tax | A tax on vehicle rental agreements. |
| Vehicle Weight Fee | A state fee based on the weight of a noncommercial vehicle. |
| Vehicle Mile Traveled (or Mileage) Fee | A tax based on the amount of vehicle miles traveled. |

# APPENDIX C: FORECASTING METHODOLOGY

## OVERALL APPROACH

In developing revenue forecasts for this study, the objective was to keep the assumptions as simple, transparent, and meaningful as possible. For this reason, relatively straightforward extrapolations of past trends were used. For the medium-term forecasts produced in this study (15 years into the future), past trends are a reasonably good indicator of future trends, absent some identifiable catalyst that will change economic behavior. In some cases, such as for automobile fuel economy, a catalyst was identified, and the future trends adjusted appropriately. However, in most cases, no catalyst could be identified that would change aggregate behavior trends significantly over the time scales being investigated.

Considered but rejected was the idea of using advanced macroeconomic models that attempt to simulate the future behavior of the state economy (such as the California Dynamic Revenue Analysis Model [California Department of Finance, 2003]). While these models are very valuable for some purposes, such as examining the indirect fiscal and economic impacts of changes in tax policy, they also have significant drawbacks. Their greatest shortcoming is their opacity: it is impossible to summarize the assumptions they contain so that a casual reader can understand how their results were reached. Another problem is that they cannot necessarily any better anticipate long-term trends: like all models, they cannot foresee how unexpected changes in the economy will shift economic outcomes. Since surprises and external drivers affect the economy all the time, it was considered important to use a forecasting approach that makes the assumptions explicit and conservative, and attempts to convey the degree of uncertainty associated with the estimates.

For these reasons, models that attempt to account for business cycles and similar effects, such as the ARIMA model, were also rejected. These models are useful for near-term forecasts because they give greater weight to emerging trends within the data. But since this study attempts to forecast longer-term revenue trends, the research team believed that ARIMA models would give undue weight to data from recent years, and would make the interpretation of the results more difficult.

In order to demonstrate the sensitivity of the results to different assumptions, forecasts were also produced for alternative scenarios of revenue growth. To develop the scenarios,

two key input assumptions were varied: California's population growth, and the inflation rate. Of course, population growth and inflation are themselves indicators of larger trends in the economy (like statewide economic growth or changes in income level) that also impact tax revenues but which are not explicitly built into this simple model. Nonetheless, using these factors to illustrate the sensitivity of revenue forecasts is instructive.

A final consideration in the forecasting methodology was volatility. This enabled the inclusion of information on the reliability of the estimates. An historic trend that is relatively stable and linear will produce a more reliable forecast than a trend that has displayed a high level of past variability. The revenue forecasts convey this information using confidence intervals that show a range of trajectories within which there is 90% certainty that the real trajectory will fall.

## General Assumptions and Data Sources

To project future growth, past trends were analyzed in each tax base over a 20-year period. The trends analysis was not based directly on past revenue data, because these can contain a certain amount of "noise" that can complicate efforts to discern trends.[20] Instead, it examined the underlying basis for each revenue source (e.g., taxable transactions for a sales tax, or gallons of fuel sold for a fuel tax).

In any trends analysis, the exact reference period chosen has a significant influence on the results. The year 1985 was chosen as the beginning year of analysis for several reasons. A later start data would provide less data to work with and would give undue weight to trends that occurred during the period of unusually low inflation and high economic growth of the mid- and late–1990s. An earlier start date would be distorted by data collected during the exceptionally high inflation rates and the rapidly evolving consumption patterns that followed the energy crises of the 1970s. Routine business cycles notwithstanding, it appears that the 20-year period, beginning in 1985, has been a period of gradual economic and social changes that will continue into the near future, barring some unforeseen catalytic change.

In general, future revenue growth was projected on the basis of real, per-capita trends in the base of each tax proposal. To do this, inflation needed to be considered. All dollar

[20] These factors may include changes in tax rates, reporting of revenues, hidden administrative charges, etc.

values were converted to their 2005 equivalents using the California Consumer Price Index (Division of Labor Statistics and Research, 2006). For future projections, an inflation rate of 3.0% was assumed, and inflation rates of 2.5% and 3.5% in the alternative revenue growth scenarios. Over the 20-year period on which the forecasts are based, the actual inflation rate was 3.1%.

All data were converted to per-capita equivalents using the state's official population estimates for July 1 of each year (California Department of Finance, 2002b, 2005, 2006b). Forecasts of future population growth were based on the state's official forecasts (California Department of Finance, 2004). The alternative revenue scenarios assumed population growth rates 20% higher and 20% lower than the state's projections.

On the basis of the size of the tax base in each year, and assuming a fixed tax rate over time, real, per-capita revenues were estimated in constant 2005 dollars for each past year. The regression model for each data series was then developed:

- For taxes that are based on monetary units (such sales and property taxes), a simple linear regression model was used:

  $revenue/capita_i - a + b(year_i)$

- For taxes that are based on physical units of consumption (such as fuel taxes, mileage charges, and registration fees), logarithms were first calculated on the data, a linear regression model was then fitted, and the data converted back. This log-linear approach allowed simulation of the effects of inflation more realistically.

  $log(revenue/capita_i) - a + b(year_i)$

This forecasting approach was repeated for three alternative scenarios for future revenue growth:[21]

- **A baseline scenario**, based on real per-capita trends over the past 15 years. This scenario assumes that inflation will remain near 3% (approximately the average rate for 1985–2004), and that population growth with match the state's official forecasts (6.8 million new residents by 2020).

[21] It may be counterintuitive that higher inflation leads to lower revenues, and vice versa. But for taxes that are based on physical units (e.g., taxes levied per gallon of gasoline), the actual taxes rate in real terms declines over time due to inflation, a process that only accelerates when the inflation rate is high.

- A **high-revenue growth scenario**, which assumes that inflation will be only 2.5% (the average for 1994–2004), and that population will grow at a rate 20% faster than the state anticipates (8.2 million new residents by 2020).
- A **low-revenue growth scenario**, which assumes that inflation will be 3.5% (just under the average for 1980–2004), and that population will grow at a rate 20% slower than the state anticipates (5.5 million new residents by 2020).

No projections were developed for sources for which insufficient data was available or which raised relatively small amounts of revenue.

Figure 22 illustrates the process for producing the estimates:

## DETAILS OF INDIVIDUAL FORECASTS

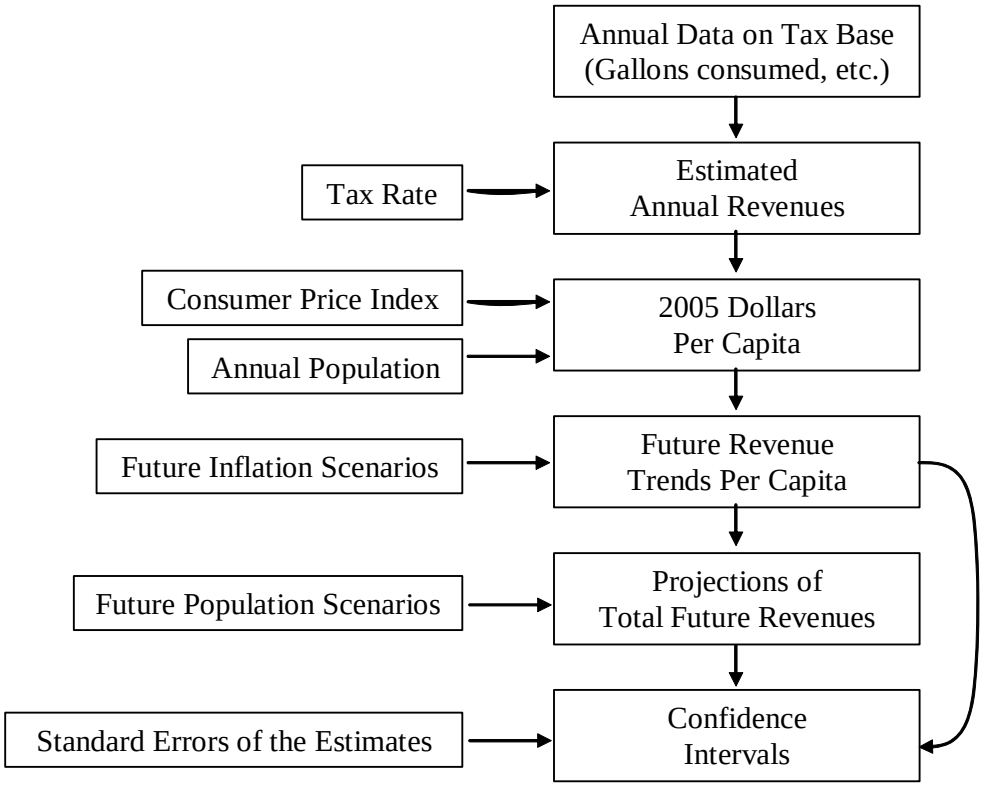


**Figure 22 Process for Developing Revenue Forecasts**

## Motor Fuel Tax

The primary data source for the forecast of fuel motor tax revenues was California gasoline consumption data (Federal Highway Administration, 2006a, Tables MF-21, MF-226). Revenues were estimated using a fixed tax rate of 18¢ per gallon. As discussed earlier, a log-linear modeling approach was then applied to more directly and realistically portray the effects of inflation on the erosion of real revenues.

The model developed for this study also accounts for the influence that the state's greenhouse-gas tailpipe emissions standards and other vehicle mandates are likely to have on the profile of the fleet. While it remains unclear whether these regulations will withstand legal challenges, they do represent a significant and long-standing political commitment in the state, so it seems reasonable to assume that the mandates will be implemented.

For the purposes of estimating the effects of these regulations on gasoline consumption, it is assumed that during 2008–2012, gasoline demand drops by 0.5% per year as the fleet shifts toward highly efficient vehicles or alternative fuels. During 2013–2020, it is assumed that demand drops by 1% per year. These assumptions are equivalent to projections produced by the California Energy Commission (2005, AD-1A-19). Table 54 summarizes the cumulative impact of these changes.

**Table 54 Effect of Efficient Vehicles or Alternate Fuel Sources on Gasoline Consumption**

| Year | Reduction in Motor Fuel Demand (%) |
|---|---|
| 2007 | 0.0 |
| 2008 | 0.5 |
| 2009 | 1.0 |
| 2010 | 1.5 |
| 2011 | 2.0 |
| 2012 | 2.5 |
| 2013 | 3.0 |
| 2014 | 4.0 |
| 2015 | 5.0 |
| 2016 | 6.0 |
| 2017 | 7.0 |
| 2018 | 8.0 |
| 2019 | 9.0 |
| 2020 | 10.0 |

**Source**: Author's estimates, based on California Energy Commission (2005, AD-1A-19).

For the purposes of projecting future federal Highway Trust Fund (HTF) allocations, it was assumed that these would follow the same trajectory as future state gas tax revenues (in the absence of federal policy interventions), except that the effects of the new $CO_2$ emissions standards discussed in the previous section have been excluded. Data on past HTF revenues was drawn from the Highway Statistics reports (Federal Highway Administration, 2006a, FE-221B). In practice, these new emissions standards will erode contributions to the Highway Trust Fund from California, New York, and other states adopting the standards. Congress will need to determine whether to shift the basis for taxation so that these states contribute to the HTF in other ways, or to allow allocations back to these states to decline as required by recent minimum return policies.

The section "Government Taxes and Fees" discusses a number of proposals for new revenue sources based on the motor fuel tax. These included a flat 6¢-per-gallon increase in 2007 and an incremental fuel tax increase of 1¢-per-gallon per year for ten years starting in 2007. The forecasts for each of these simply used the proposed tax rates in each year in conjunction with the model described above.

That section also proposes an indexed fuel tax, in which the tax rate would increase annually at the rate of inflation. In this case, the revenue increase was defined as the difference between the expected revenues for an indexed fuel tax and the expected revenues for a nonindexed fuel tax. In practice, this meant calculating the difference between a traditional fuel tax (under the three inflation and population growth scenarios) and the same tax under a scenario with zero inflation. Because revenues for a traditional fuel tax drop most precipitously when inflation rates are high, the amount of new revenue generated by the indexed fuel tax appears highest during periods of high inflation. But this counterintuitive result applies only on paper. In practice, an indexed fuel tax merely minimizes revenue losses that would have occurred anyway, helping ensure that revenues keep pace with costs.

## Sales Taxes on Motor Fuel

Our forecast of revenues from the portion of sales taxes derived from motor fuel sales builds upon the motor fuel tax forecasting model described above. It incorporates the same data on the volume of fuel sales, and the same assumptions about how environmental regulations will influence fuel consumption by the future vehicle fleet. However, this model adds an additional data source: past motor fuel prices as reported by the California Energy Commission (2006a, 2006b).[22] Because this tax is based on monetary rather than physical units, a linear regression model was used to estimate future trends.

## Mileage Fees

Mileage fees have been proposed as a strategy for retaining user fees as a basis for transportation finance, while shifting the funding base away from motor fuel tax. Such fees could be adopted on top of the existing gasoline tax, or as a substitute for it. The section "Government Taxes and Fees" discusses a proposal that would replace the current 18¢-per-gallon gasoline tax with a 1¢ mileage fee.

To estimate the revenues from this policy, revenues were first estimated from a simple mileage fee. Revenue estimates were developed using data on vehicle miles traveled in California (Federal Highway Administration, 2006a, Table VM-2). Because these are

[22] Unfortunately, diesel price data was available for only part of the study period. Since no data were available for the years 1985–1994, it was assumed that diesel prices were equal to gasoline prices. Over the past ten years, the average prices for the two fuels have been approximately equal, although they have varied independently.

physical rather than monetary units, a log-linear regression model was used to project future trends. The difference between revenue from the mileage charge and the revenue that would have been received from the motor fuel tax it was replacing was then calculated.

Proceeds initially start out small because the tax is designed to be revenue neutral in its first year. However, as the vehicle fleet grows more fuel efficient, the revenue from the tax begins to grow due to the eroding sales of motor fuel relative to the amount of vehicular activity. This is illustrated in Figure 23.

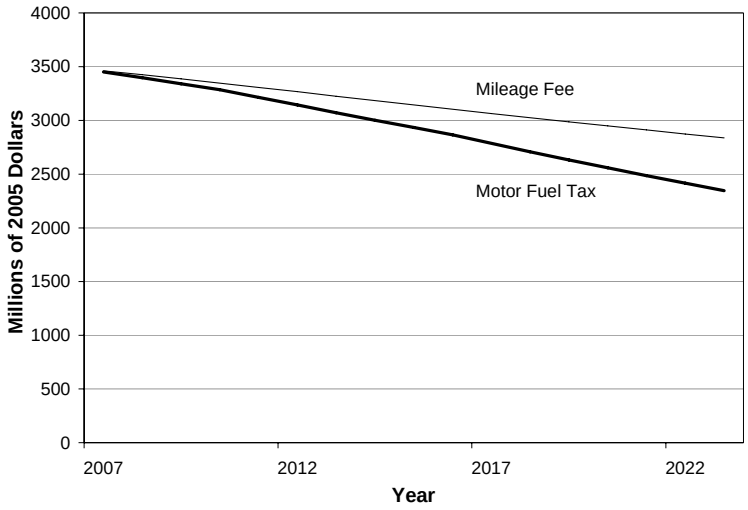


**Figure 23 Projected Revenues for Mileage Fee and Motor Fuel Tax**
*Source*: Authors' analysis.

## Vehicle Registration Fees

As discussed in the section "The Current System of Transportation Funding in California," vehicle registration fees are flat user fees paid annually by drivers to support the California Highway Patrol, California Department of Motor Vehicles, and other transportation support services. Separate forecasts were developed for fees on personal and commercial vehicles. For each, the models were based on the state's vehicle registration data (California Department of Finance, 2006a, Table J5) and a fixed value for the tax rate ($31 per vehicle for personal vehicles, and an estimated average of $266 for commercial vehicles). Again, a log-linear regression model was used.

## Vehicle License Fees

Vehicles license fees (VLFs) are levied in lieu of a personal property tax on motor vehicle ownership, and are based on the value of a vehicle, with revenues traditionally returned to local governments. In recent years, California's vehicle license fee has been reduced from 2% to 0.65%. The proposal considered in the section "Government Taxes and Fees" would restore this tax to half its historic level by raising it 0.35%.

Unfortunately, no data are available providing the total value of motor vehicles in the California. Consequently, the same forecasting approach could not be followed for this tax as was done for the others. Because the formula used by California to determine a vehicle's value is so complicated, even an estimate of the total market value of vehicles in the state would not predict VLF revenues very accurately. Instead, the forecast was based directly on VLF revenue data (California Department of Finance, 2006a, Table M-10). Revenue data was adjusted from each year to compensate for changes in the tax rate, to remove the effect of political factors from the projections. Beyond that, a simple linear regression model was used for the forecasts.

This approach has a number of unavoidable shortcomings. Most significantly, unlike most dollar-based taxes (such as the sales tax), for which revenues automatically rise in parallel with inflation, the VLF has built-in time lags: since the value of a vehicle is set only at the time of its purchase, the VLF cannot capture increases in vehicle value due to inflation. As a result, actual government revenues from the VLF will not be as inflation-proof as the model indicates.

## Statewide Sales Taxes

This forecast is based on data for the state's taxable transactions (California Department of Finance, 2002a, Table K-4; California State Board of Equalization, 2006). It estimates real per-capital tax revenues using a fixed, 0.25% tax rate, and then forecasts these revenues using a linear regression model.

Sales tax revenues have been growing only slightly faster than inflation. Because the growth rate is so small, year-to-year volatility in sales tax revenues appear to take on much greater relative importance. As a result, the uncertainty about the future trends in sales tax revenue is very large, as indicated by the wide confidence intervals in Figure 9 through Figure 11.

## Local-Option Sales Taxes

This forecast is a bit more complex than the statewide forecast, and contains a number of hidden assumptions. It starts with each county's taxable sales per capita in 2004, and calculates the ratio of this figure with respect to the statewide value in 2004 (call this the *consumption ratio*). It then estimates taxable sales in each county by year, based on the overall growth trend estimated earlier for the statewide sales tax, the county's consumption ratio, and the county's projected population. The data sources for the county-level data are the same as those cited earlier for the statewide population and taxable transactions data. While this approach produces reasonable results, it does not capture potential economic changes that may occur within the state. It essentially assumes that the relative wealth of the counties will remain fixed at their 2004 levels.

Based on the tax rates, enactment dates, and expiration dates of each local-option tax measure, the revenue stream that each local-option sales tax would generate was calculated (California State Board of Equalization, 2004, Table 21C). These were aggregated into separate forecasts of taxes that have been enacted permanently (Los Angeles, BART District, Santa Clara, San Mateo, and Santa Cruz), and for those that have been enacted on a temporary basis (Alameda, Contra Costa, Fresno, Imperial, Madera, Marin, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, and Sonoma).

## Property Taxes

Although property taxes are a major source of revenue for transportation in California, these revenues are generated through thousands of separate assessments administered at a local level. Data and estimate trends could not be collected for these individually. Instead, a forecast was developed for an imaginary statewide tax that would generate an equivalent amount of revenue. This methodology does not account for the possibility that areas using more tax revenue for street improvements might see a resulting increase in property values, nor the significant variations in taxing behavior that may occur in different cities, nor in the urban versus rural parts of the state. However, it does provide a general guide to the likely trajectory of the property tax revenues over time.

The primary basis for this forecast was the "net taxable assessed value of tangible property subject to local taxation," (California Department of Finance, 2006a, Tables M-21 and M-22).[23] To estimate the effective statewide tax rate, local property tax revenues being used for transportation statewide were estimated. Based on local fiscal data from the Office of

the State Controller (2005, x, xiv; 2006a, v, viii; 2006b, vi), it was estimated that county and municipal streets programs, transportation planning agencies, and public transit operators used a combined $3.1 billion in local property taxes, special assessments, and general revenues for transportation purposes in 2004. The ratio of this revenue figure with respect to the 2004 net taxable assessed value for property suggests an effective statewide tax rate of 0.097%. Assuming that this effective tax rate has been constant over time, real per-capita revenues and forecast future growth were then estimated using a linear regression model.

## Forecasting Results

As discussed above, the first step in estimating the revenue trends that appear in this report was to develop comparable, historic series for each individual revenue source. These series are normalized into constant 2005 dollars per capita, and adjusted to take into account any changes in tax rates. Based on the past series, future trends were projected, using common assumptions on population growth and inflation rates. The resulting trend lines are described in Table 55. It shows that of the six key revenue sources analyzed, three have historically had negative growth in real per-capita terms (motor fuel taxes, vehicle registration fees, and sales taxes). Three others (sales taxes on motor fuel, property taxes, and vehicle license fees) have shown positive growth on a per-capita basis. Looking at total revenues projected for future years, motor fuel taxes and vehicle registration fees experience negative revenue growth in constant dollars under all three future growth scenarios.

[23] These data were available only as far back as 1988. Consequently, a 17-year analysis period was used.

**Table 55 Historic and Projected Revenue Trends for General Tax Types**

| Revenue Source | Real Annual Per-Capita Revenue Growth, 1985–2004 (%) | Projected Real Growth Rate 2005-2020 (%) | | | Tax Needed to Raise $1 Billion in 2005 |
|---|---|---|---|---|---|
| | | Low [a] | Base [b] | High [c] | |
| Motor Fuel Tax | (2.75) | (3.13) | (2.44) | (1.75) | 5.3¢/gal. |
| Vehicle Registration Fee | (2.07) | (2.03) | (1.33) | (0.64) | $33.52 |
| Sales Tax | (0.19) | 0.76 | 0.97 | 1.17 | 0.19% |
| Sales Tax on Motor Fuel | 0.53 | 0.81 | 1.02 | 1.22 | 2.59% |
| Property Tax | 1.67 | 1.74 | 1.95 | 2.16 | 0.03% |
| Vehicle License Fee | 3.90 | 3.13 | 3.35 | 3.56 | 0.10% |

*Sources*: Authors' estimates. See Appendix C for details.

a. Low-growth scenario assumes 3.5% inflation and –20% population growth.
b. Baseline-growth scenario assumes 3% inflation and state forecast for population.
c. High-growth scenario assumes 2.5% inflation and +20% population growth.

Table 56 presents the results of revenue forecasts for the eight new tax revenue proposals examined in this study. It compares the revenue generated by each proposal in 2020 to the revenues projected to be generated in 2020 by the existing 18¢-per-gallon motor fuel tax. Since some options produce rising revenues over time, and others produce falling revenues over time, and still others are phased in incrementally, the table also compares the aggregate revenues produced by each proposal for the years 2007–2020. Finally, in order to compare which options produce the most robust revenue streams over the long term, the table summarizes the annual growth projected for each revenue source between 2019 and 2020.

## Table 56 Projected Revenues from Specific Tax Proposals

| Revenue Source | Projected Revenues in 2020 (Millions of 2005 Dollars) | | | Revenue as Percent of 18¢/Gallon Fuel Tax (%) | | Annual Revenue Growth 2019-20 (%) |
|---|---|---|---|---|---|---|
| | Low [a] | Base [b] | High [c] | 2020 | Total 2007–20 | |
| Existing Motor Fuel Tax—18¢/Gallon | 2,093 | 2,346 | 2,627 | – | – | –2.2 to –3.5 |
| Additional 0.35% Vehicle License Fee | 1,841 | 1,905 | 1,968 | 75–88 | 53–58 | 2.8 to 3.2 |
| Add 1¢/Gallon Fuel Tax Each Year for Ten Years | 1,163 | 1,304 | 1,459 | 56 | 35–36 | –2.2 to –3.5 |
| Index Existing Fuel Tax to Inflation | 1,442 | 1,239 | 1,009 | 38–69 | 19–31 | 5.9 to 6.6 |
| Additional 6¢/Gallon Fuel Tax | 698 | 782 | 876 | 33 | 33 | –2.2 to –3.5 |
| Additional 1/4% Sales Tax | 733 | 758 | 783 | 30–35 | 24–27 | 0.75 to 1.1 |
| Additional $31/Year Personal Vehicle Registration Fee | 462 | 518 | 580 | 22 | 21 | –1.2 to –2.6 |
| Replace 18¢/Gallon Fuel Tax with 1¢/Mile Mileage Fee | 401 | 449 | 503 | 19 | 8 | 7.2 to 8.6 |

*Source*: Authors' analysis.

a. Low-growth scenario assumes 3.5% inflation and –20% population growth.
b. Baseline-growth scenario assumes 3% inflation and state forecast for population.
c. High-growth scenario assumes 2.5% inflation and +20% population growth.

# APPENDIX D: CALIFORNIA LEGISLATIVE HISTORY, 1999 TO 2005

## INTRODUCTION

This appendix explores the 128 bills intended to increase or decrease transportation revenue that were introduced into the California legislature from 1999 through 2005.[24] The analysis found that the California legislature has been reluctant to raise revenues through traditional statewide taxes and fees. Options to increase funding at the local level were more successful.

## METHODOLOGY

An annual index of all bills proposed in the California Assembly and California Senate, dating back to 1993 is available on the California senate or assembly websites (Legislative Council of California, 2005). The indices for bills proposed in the California Legislature from 1999 through 2005 were scanned for the following keywords: transportation, fuel, transit, highway, freeway, toll, infrastructure, traffic, vehicle, tax, fee, truck, road, street and diesel.[25] Bills exhibiting any of the aforementioned keywords were further scanned for relevancy by using the latest senate or assembly analysis available for viewing on the aforementioned website, or in cases where a legislative analysis was not available for viewing, the most recent amended text of the bill was scanned for relevancy.

[24] For a prior study of proposals in the California Legislature made between 1979 and 1999, see Appendix II of *The Future of California Highway Finance* (Brown et al. 1999).

[25] A keyword search is available on the legislative website but ultimately ruled out as a method of detecting bills related to this research because the search function provided too many nonrelevant hits to be effective. Therefore, bills that were inappropriately labeled or contained transportation-related riders that compose a mere fraction of an otherwise unrelated bill may have been inadvertently excluded from this study.

Bills were included this study if they met any the following three criteria:

1. Increased or decreased transportation funding (whether by the addition or reduction of taxes or fees, or by the redirection of existing state revenues to or from transportation purposes)
2. Introduced a new transportation-related revenue source or modified an existing one (i.e., authorization of local sales tax for transportation purposes subject to voter authorization, authorization for a transportation authority to enter into agreements with private entities to develop toll roads)
3. Extended or deleted a sunset date for any of the bills in 1) or 2)

Bills were not included if they redistributed funds from one transportation-related purpose to another. Bills about the vehicle license fee (VLF) were not included because the VLF funds do not go to transportation.

The committee analyses for each bill were used to identify organizations that voiced support and opposition.

## ANALYSIS

During the last seven years, California legislators made 128 proposals regarding transportation revenue. Over two-thirds (102) of these proposals attempted to increase transportation revenues, but only 36 of those were signed by the governor. Of the proposals to increase transportation revenue, only four attempted to increase fuel taxes as a means of revenue generation. While legislators were reluctant to alter existing fuel taxes, several alternative methods of revenue generation were proposed, as follows:

- Redirect state general fund revenue (32)
- Increase the vehicle registration fee (19)
- Establish a toll for bridge and highway use (16)
- Add a local sales tax dedicated to transportation revenue (15)
- Increase the driver's license fee (4)
- Increase the commercial-vehicle weight fee (3)
- Establish a tax on vehicle rental agreements (2)
- Allow for the establishment of transportation-related assessment districts (2)

- Establish new or additional development fees (1)
- Allow for a local vehicle license fee (1)

The success of these measures varied, but Figure 24 generally shows a trend in the devolution of transportation funding from the state to local level. Most of the bills signed into law related to local registration fees, local sales taxes, and tolls (26 out of 36). An analysis of the major funding proposals is provided in more depth in Figure 24.

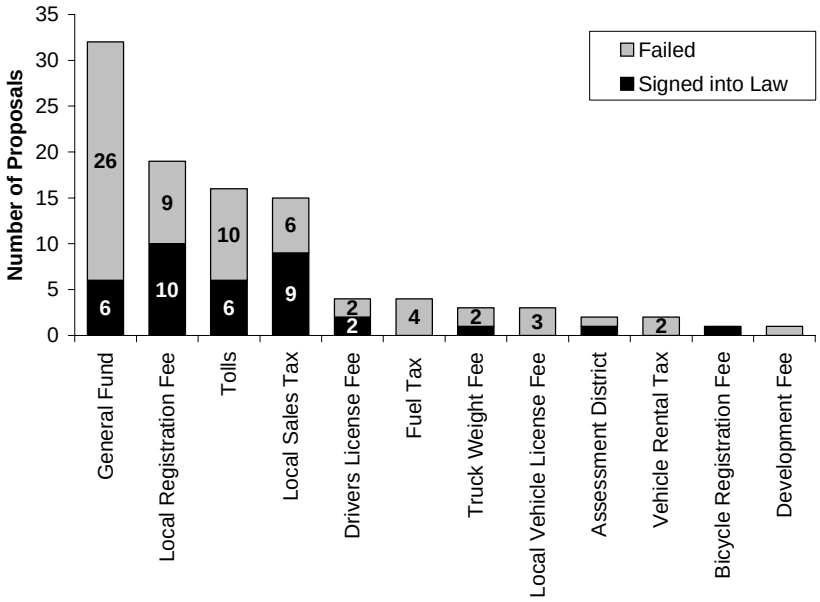


**Figure 24 Transportation Revenue Proposals in the California Legislature from 1999 to 2005**

*Source*: Legislative Council of California, 2005. See "Methodology" earlier in this section.

## State General Fund Revenue

Proposals in this category included eight attempts to dedicate a percentage of the general fund (up to 5%) to transportation and other infrastructure projects, six attempts to dedicate all or a portion of the sales and use tax on gasoline to transportation purposes, and nine attempts to earmark one-time funds for specific purposes such as supplementing local transportation revenues or supporting specific transportation projects. Another proposal included a dedication a portion of property tax revenues to an incentive-based transportation grant program. Several bills were signed into law, however two of the bills required voter approval and only one (Proposition 42—see discussion in the section "The Current System of Transportation Funding in California") received voter approval to

dedicate the sales tax on gasoline to transportation purposes. The unsuccessful constitutional amendment (receiving only 36% approval) would have dedicated an increasing percentage of the state's general fund revenue to transportation purposes. Local governments supported proposals to redirect funds from the general revenue to transportation and other infrastructure improvements when the funding was directed to them. There was very little opposition to these measures.

## Vehicle Registration Fee

Sixteen of the proposals to increase or change vehicle registration fees were to impose local fees varying ranging from one to six dollars. The funds would be used for purposes such as vehicle abandonment abatement, environmental mitigation, traffic congestion relief, and vehicle theft abatement. Support came mostly from local governments and counties, environmental organizations, and public safety departments while opposition to these proposals came mostly from taxpayer associations, automotive dealers, and vehicle and trucking associations. Recently, the governor has vetoed four such bills because they impose a tax on vehicles without a popular vote.

## Local Sales Tax

The majority (nine of fifteen) of these proposals allowed for or extended the use of a local sales tax for specific counties or municipalities subject to voter approval. Other proposals included deleting a 20-year sunset requirement on local sales taxes and lowering the required two-thirds majority required to approve a local sales tax to either 55% or a simple majority. Support for these measures included numerous local governments and agencies while opposition was limited to taxpayer associations.

## Tolls

Five proposals in this category allowed transportation agencies to enter into agreements with private entities to develop toll roads. Other proposals included extending and ending a sunset date for the I-15 HOT lanes, allowing tolls to vary with congestion on the Bay Bridge, and increasing tolls on Bay Area bridges to fund seismic reconstruction improvements. Support for these proposals varied but mostly included regional governments and private companies while opposition was limited to an association of state engineers.

## Fuel Taxes

The legislature was reluctant to increase fuel taxes. Original proposals included specific increases in the amount of the fuel tax or index to the fuel tax, but amendments were repeatedly made to weaken the bills so that no actual increase in the tax would occur unless gas prices decreased. None of these proposals were advanced to the senate or assembly floor for a vote. Proposals to increase fuel tax or index fuel tax were supported by local governments and developers but opposed by automobile and trucking associations.

## Other Proposals

Two proposals in 2003 to add a vehicle rental impact fee of 2.29% would have provided $65 million in additional transportation revenue. Both received approval on both floors of the legislature, while one died after amendments, and the second was vetoed by the governor because it allowed vehicle rental companies to pass on the vehicle license fee to customers without advertising such rates.

Two bills to increase driver's licenses fees were signed into law by the governor after passing the legislature. One of these links certain fees to the consumer price index to keep up with inflation.

A bill to allow for the imposition of a local vehicle license fee for the City and County of San Francisco was twice proposed, but failed to pass the legislature. Support was provided by the City and County of San Francisco, some business groups, and pedestrian and bicycling advocates while opposition came from automobile and taxpayer associations.

## Proposals to Reduce Transportation Revenue

During the same period, 26 bills were proposed to reduce transportation revenues; five of those bills were signed by the governor. Twenty of these bills provided special exceptions from fuel taxes and fuel sales taxes, primarily to support the use of alternative fuels and low emissions vehicles in the state and subsidize providers of public goods, such as transit agencies and emergency service providers. The remaining six proposals attempted to reduce various transportation revenues including elimination of toll, driver's license fees, fuel taxes, and previously dedicated general fund revenues.

## CONCLUSION

In recent years, the Legislature and past three governors have been reluctant to increase fuel or other taxes without voter approval. This is evidenced by the scarcity of serious proposals to increase or index the gasoline tax and the recent veto of four bills to authorize local vehicle registration fees. Bills that were approved included those that allowed for local increases in sales taxes dedicated for transportation purposes (which require voter support) and two statewide ballot measures to use general fund revenue for transportation revenue. The Legislature did increase fees for driver's licenses, but that increase was tied to inflation, and, therefore, would be small. They also supported the development of new toll roads.

Revenue mechanisms that experienced the least amount of opposition from interest groups were more likely to be signed into law, including some of the bills appropriating general funds, authorizing tolls, or permitting voter-approved local sales taxes. Proposals to increase vehicle registration fees received significant support because they provided fairly defined benefits to local governments, but also received significant opposition from the automobile, trucking, and taxpayers associations.

# APPENDIX E: STAKEHOLDER INTERVIEWS

During the fall of 2005, telephone interviews were conducted with seventeen experts involved in transportation finance issues in California. The interviewees were chosen to reflect a diversity of perspectives, including regional governments from across the state, state government agencies, and interest groups. Respondents were asked their views on the value of pursuing a wide range of revenue options, and whether or not it would be valuable to include questions about these options in the public opinion polls. In addition, the interviewees were asked how they thought the public felt about several broader thematic questions:

- Do voters believe that it is preferable to rely on user fees to generate most transportation revenues?
- Should both state and local revenue measures be earmarked in advance for particular projects, or should they be allocated according to a planning process that determines which investments best meet local and regional objectives?
- Who should decide whether to raise taxes and fees for transportation purposes? Should the state ask voters to decide on new taxes and fees, or should the governor and state legislators make those decisions?
- Is it a good idea to transfer increasing responsibility for raising revenues from the state government to local governments?

The interviewees were:

**DeAnn Baker**, Legislative Representative, California State Association of Counties

**Dan Beale**, Managing Director, Public Policy, and Programs, Automobile Club of Southern California

**Andrew T. Chesley**, Interim Director, San Joaquin Council of Governments

**Stuart Cohen**, Executive Director, Transportation and Land Use Coalition

**Jonathan Coupal**, President, Howard Jarvis Taxpayer Association

**George A. Dondero II**, Executive Director, Calaveras Council of Governments

**Carl Guardino**, President and CEO, Silicon Valley Leadership Group

**Debra L. Hale**, Deputy Executive Director, Transportation Agency for Monterey County

**Jim Kemp**, Executive Director, Santa Barbara Transportation Authority

**Michael Lawson**, Executive Director, Transportation California

**Robert McCleary**, Executive Director, Contra Costa County Transportation Authority

**Annie Nam**, Senior Regional Planner, Finance, Accounting, and Budget Division, Southern California Association of Governments

**Gary A. Patton**, Executive Director, Planning and Conservation League

**Katherine Perez**, Executive Director, Transportation and Land Use Collaborative of Southern California

**Rusty Selix**, Executive Director, California Association of Councils of Governments

**Juan Uranga**, Executive Director, Center for Community Advocacy (Salinas)

**David Yale**, Director of Regional Programming, Los Angeles County Metropolitan Transportation Authority

# APPENDIX F:
# ADVISORY PANEL MEMBERS

**John Barna**, Deputy Secretary, California Business, Transportation, and Housing Agency

**Jesse Brown**, Executive Director, Merced County Association of Governments

**Dana Curry**, Transportation Director, California Legislative Analyst's Office

**Diane C. Eidam**, Executive Director, California Transportation Commission

**Therese W. McMillan**, Deputy Executive Director, Policy, Metropolitan Transportation Commission

**Robert E. Paaswell**, Director, University Transportation Research Center, City College of New York

**Steven Schnaidt**, Staff Director, California Senate Standing Committee on Transportation and Housing

**Mark Pisano**, Executive Director, Southern California Association of Governments

**David Yarnold**, Executive Vice President, Environmental Defense

# APPENDIX G:
# TRENDS IN STATE MOTOR VEHICLE FUEL TAXES

State governments started to adopt motor vehicle fuel taxes in the early twentieth century, both to fund road construction and relieve the burden on other revenue sources such as property taxes. The first state gas tax was enacted in Oregon in 1919. Ten years later the gas tax had been implemented in every state. At the federal level, Congress first adopted fuel taxes in 1932 as a temporary tax, but the proceeds were not dedicated to highway spending. In 1956, however, Congress established the Highway Trust Fund and dedicated federal fuel tax receipts for highway spending (Puentes and Prince, 2003).

State fuel taxes continue to be the primary source of state highway transportation revenue. In 2000, state fuel taxes represented an average of 49% of the highway transportation revenues that states generated themselves (Table 57). In 2000, state fuel taxes represented over one-third of all revenues used by states for highways and state and federal fuel taxes combined represented about two-thirds of those revenues (London et al., 2002).

**Table 57 States' Own-Source Revenues Used for working Highways in 2000**

| Own-Source | National Average (%) |
|---|---|
| Motor Fuel Taxes | 49 |
| Motor Vehicle and Carrier Taxes | 27 |
| Tolls | 8 |
| General Funds | 7 |
| Other State-Imposed Taxes and Fees | 4 |
| Miscellaneous | 5 |
| Total | 100 |
| *Source*: London et al. 2002, xv. | |

The relative importance of state fuel taxes as a revenue source has declined over the past 70 years for a number of reasons. Legislatures have usually been reluctant to increase tax rates. Such increases are, however, necessary to maintain revenues because several factors have eroded fuel tax revenues including inflation, population growth, increased travel demand, and increased vehicle fuel efficiency.

## INFLATION

With few exceptions, states have not raised fuel taxes enough to keep up with inflation. The average state excise gas tax rate increased from 7¢ per gallon in 1970 to 20¢ per gallon in 2005, an increase of over 160% (Figure 25). However, in 1970 dollars the inflation adjusted rate actually fell from 7¢ per gallon to under 4¢ per gallon, a real decline of 45%. In order to keep pace with inflation over the same period, the average rate would have had to increase from 7¢ per gallon to 35¢ per gallon. While 28 states have raised their gas tax rates since 1992, only three have raised their rates enough to compensate for the effects of inflation (Puentes and Prince, 2003). In 2005, only 19 states had a gas tax rate higher than their rate in 1995. In California, the state excise tax on gas rose from 7¢ per gallon in 1970 to 18¢ in 2005, an increase of 157%, however, when adjusted for inflation the rate actually fell 29% to just under 5¢ per gallon. Nominal and real gas tax rates for the United States and California are shown in Figure 25.

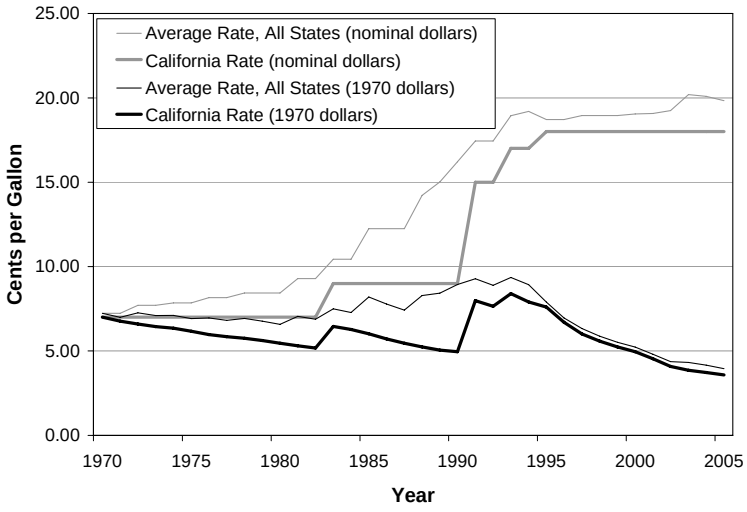


**Figure 25 Trends in US and California Gas Tax Rates**
*Source*: The Tax Foundation 1970–2004. Sagoo 2005.

Nineteen states since 1980 have used some form of a variable tax rate, including indexing (Puentes and Prince, 2003). Many states, most recently Wisconsin, have repealed their indexing mechanisms, leaving only a handful that still index their gas tax. The net effect is that most states are generating less revenue from the gas tax over time, when revenues are measured in real terms. In addition, several states now have voter-imposed tax limitations requiring voter approval for any increase to the gas tax.

In addition, variation in rates between states has increased. In 1970, rates varied from a low of 5¢ per gallon in Texas and Missouri, to a high of 9¢ per gallon in Washington and New York, and 11¢ per gallon in Hawaii. By 2005, rates varied from a low of 7.5¢ per gallon in Georgia, to a high of 30¢ per gallon in Rhode Island. Wisconsin, which recently repealed an indexed rate in favor of a fixed rate, has a rate of 29¢ per gallon.

Since state fuel tax rates have not kept pace with inflation, gross state excise tax receipts on gasoline, adjusted for inflation, fell from $34 billion in 1973 to under $20 billion in 1981, and according to 2002 estimates have not eclipsed 1973 inflation-adjusted revenue levels (Puentes and Prince, 2003). In California, while state fuel tax collections increased by 390% from 1970 to 2002, when adjusted for inflation revenue grew by only 11%.

## Population and Travel Growth

At the same time that revenues are have been eroded by inflation, revenue growth has also been outpaced by rapid growth in the population, resulting in a sharp decline in per-capita revenues. California's population grew by 70% from 1970 to 2000, compared to 38% for the nation as a whole. As a result of population growth alone, per-capita highway transportation revenue from state sources in California fell by 38.6% for the period 1965 to 2000. Only two western states were able to generate enough of their own revenue for highways to keep up with population growth (Table 58).

**Table 58 Growth in States' Own-Source Revenue for Highways, 1965–2000**

| State | Revenue Growth (%) | Per-Capita Revenue Growth (%) |
|---|---|---|
| Arizona | **261** | 11.3 |
| California | **12** | (38.6) |
| Idaho | **76** | (6.8) |
| Montana | **35** | 5.8 |
| Nevada | **204** | (32.5) |
| Oregon | **36** | (23.2) |
| Washington | **41** | (28.9) |
| *Source*: London et al. 2002, 27. | | |

In addition, growth in vehicle miles traveled (VMT) has occurred even more rapidly than growth in the population, increasing by almost 147.8% nationally from 1970 to 2000. At a state level, California VMT grew by 155.5% from 1970 to 2000. Trends in the California gas tax rate (in real 1970 dollars), state population, and VMT (Figure 26) show that the

real value of the tax per gallon has fallen since 1970, while vehicle miles traveled has increased over two-and-one-half times what it was in 1970.

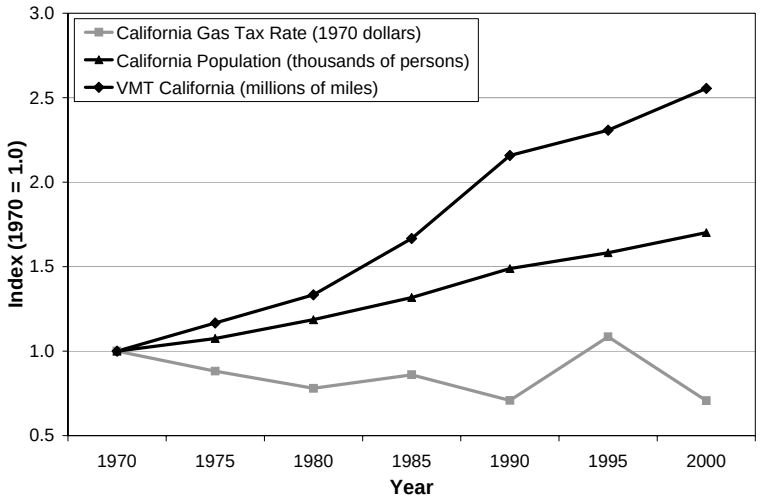


**Figure 26 Trends in California Gas Tax Rates, Population, and VMT**
*Source*: Sagoo 2005; California Department of Finance 2005; California Department of Transportation 2000; Department of Transportation 2006a.

## CONCLUSIONS

Persistent inflation, population-driven growth needs for road improvements, increased VMT, and driver purchases of more fuel-efficient vehicles subsequent to the energy crisis of the 1970s, have increased the demand for transportation revenues beyond levels that can be generated by the gas tax. Many states aggressively increased their gas tax rates during the 1980s and into the 1990s in an attempt to compensate for the effects of inflation and growth, however, these increases eventually leveled off by the mid-1990s, and inflationary impacts coupled with growth impacts resulted in substantial declines in both real revenue growth and per-capita revenue growth.

# APPENDIX H: SUMMARY OF STATE BALLOT MEASURES

## INTRODUCTION

State legislatures seem increasingly reluctant to increase revenues without direct voter approval through a ballot measure at either the state or local level. Several of the recent proposals in California to generate transportation funding would require voter approval. The last state gas tax increase was put before a statewide vote. An analysis of statewide measures to increase funding may provide some insight for future California efforts. From 2001 to 2005, 30 transportation-related and 64 non–transportation-related statewide ballot measures were placed before voters in various states. A review of the success and failures of these recent ballot measures provides insight into likely public acceptance of these revenue options in California.

## METHODOLOGY

The data source for this analysis is a database of state ballot measures maintained by the National Conference on State Legislatures (NCSL). All fifty states were searched for measures introduced from 2001 to 2005 that fell under the topics "tax and revenue—state" and/or "transportation." The database includes all types:

- Any type of election (general, primary, or special)
- Any type of ballot measure (initiative, legislative referendum or popular referendum)

The search criteria resulted in 206 hits, of which 94 were selected as relevant to this research. Three criteria were used in this selection: ballot measures must either 1) raise a tax; 2) relate to a transportation funding purpose; or 3) propose a bond measure. However, due to the uniqueness of tobacco sales taxes, these increases were excluded from this analysis.

## ANALYSIS

Target ballot measures were arranged in like categories for ease of analysis—bond measures and "other" measures. Due to the small sample sizes, it is difficult to determine if there is a significant difference in voter approval of transportation-related measures and

non–transportation-related measures for both categories. As shown in Table 59, at least three-quarters of bond measures were approved by voters while only one-third of other revenue measures were approved by voters. An analysis of each category of ballot measure is analyzed in greater depth below.

**Table 59 Summary of State Ballot Measures**

| Measure Type | Number | Percent That Passed |
|---|---|---|
| Bonds | | |
| Transportation-related | 18 | 78 |
| Non-transportation | 58 | 86 |
| Other measures | | |
| Transportation-related | 12 | 3 |
| Non-transportation | 6 | 17 |

*Source*: National Conference of State Legislatures 2006.

## Bond Measures

The majority (57%) of transportation-related bond measures cited matching federal funds as an objective, providing a clear need for immediate voter approval since federal funding is typically a use-it-or-lose-it deal. Also, while it is not clear in all cases, a majority of these approved bond measures also list specific transportation projects that would be funded, or at least specific categories of expenditures.

These bond measures may be successful largely because they do not ask voters to approve a tax increase (most bonds are not repaid from a dedicated revenue or an increase in taxes). Instead, general obligation bonds are backed by the state's line of credit and repaid from a state's general revenues (i.e., income or sales tax revenues). Potentially, the expense of projects funded through general obligation bonds is smoothed out over several decades. Thus, funds can be generated immediately without the need for raising taxes.

An overwhelming majority of non-transportation bond measures were approved by the public (50 of 58 measures approved). Approved measures primarily consisted of water projects, educational facilities, land conservation, economic development, historic preservation, senior citizen or veterans' benefits, and other "feel good" projects. Among those measures that failed, no consistent pattern suggests why voters rejected them. Unlike transportation-related measures, these measures rarely included federal matching money as an objective.

## Transportation-Related Funding Measures

There were several types of other transportation-related funding measures placed before voters recently in statewide elections. Measures included rededication of existing transportation-related state revenues to transportation purposes that previously supported general revenue (i.e., automobile sales tax), rededication of a portion of general revenue for transportation purposes (i.e., 3% of general revenue), and increases to a state gasoline excise tax.

Only one of three proposals to rededicate a portion of general revenue for transportation purposes was approved by voters. However, this measure in Colorado simply allowed excess revenue collected by the state to be spent on a variety of purposes, including transportation. Lastly, three of four measures to increase a state gas excise tax were overwhelmingly turned down, with approval rates varying from 13% to 37%. Washington is the exception to this trend, which is described in detail in Appendix I.

## Funding Measures Unrelated to Transportation

Of six measures proposing various tax increases for non-transportation purposes, only one passed. The successful measure from California authorized additional income tax on incomes over $1 million for mental health services. Two of the five defeated measures would have increased taxes on telephone usage for 911 services, while another two would have increased property tax (one for education purposes and the other for unspecified purposes). The last of the five defeated measures would have increased retail sales tax by 1% for education purposes. The unsuccessful measures all would have raised taxes paid by most of the public, whereas the sole successful measure increased taxes on less than 0.001% of that state's population. (California Franchise Tax Board, 2004) Clearly, voters were reluctant to tax themselves.

# CONCLUSION

The success of bond measures exhibits a trend toward increased reliance on, and public acceptance of, finance measures as opposed to tax increases to obtain a service or improved infrastructure. Only three statewide ballot measures approved between 2001 and 2005 directly resulted in increased taxes on voters as opposed to rededicating funds from general fund revenue. Each of those three measures is unique in circumstances. The Colorado measure retained surplus taxes collected by the state, the California measure increased state

income taxes on incomes over $1 million, and the Washington measure sustained the legislature's prior decision to increase taxes (see Appendix I).

# APPENDIX I: TEXAS AND WASHINGTON CASE STUDIES

## INTRODUCTION

States face common challenges in developing and maintaining adequate transportation funding strategies, including an aging transportation infrastructure, needs for new infrastructure fueled by growth in population and VMT, resistance by constituents to tax increases, growing use of more fuel efficient vehicles, and the erosion of existing transportation revenues owing to inflation. Different states have varying levels of ability within their current transportation funding systems and local political landscapes to address these transportation challenges. The purpose of these case studies is to provide an overview of two very different approaches of providing additional resources to address current shortfalls in transportation funding.

## TEXAS

Prior to 2001, Texas relied on pay-as-you-go transportation financing. That is, the Texas Department of Transportation (TxDOT) initiated improvements to the transportation system when enough tax revenue was collected. Following the passage of several key pieces of legislation by state voters and the state legislature, TxDOT and local governments can now leverage dedicated transportation revenue to finance major projects that would have taken several more years to initiate under traditional funding methods, saving the state the increased costs associated with labor, right-of-way, and materials. This ability to leverage transportation revenues combined with increased options for financing and building transportation infrastructure has changed the way TxDOT now approaches transportation funding.

### Background

As in other states in the southern and western United States, Texas has seen explosive growth in population and vehicle miles traveled. Over the past 25 years, the population of Texas grew 57% and vehicle miles traveled increased 95%. However, total road capacity increased only 8% over this same period. Forecasts indicate that over the next 25 years, the

state will experience increases in population (64%) and vehicle miles traveled (214%), but only a 6% increase in road capacity (Texas Department of Transportation, 2006b).

## Legislation

In November of 2001, the voters of Texas overwhelmingly (68% approval) approved Proposition 15, a constitutional amendment designed to give local governments and TxDOT more options in funding road and highway construction through the formation of regional mobility authorities. As opposed to raising taxes to pay for the increasing cost of maintenance and new construction of the transportation system, Proposition 15 allows for local governments to form regional mobility authorities that can issue bonds from whatever revenue sources are available to them. Proposition 15 also created the Texas Mobility Fund, but did not dedicate a source of revenue to the fund (Texas Department of Transportation, 2004b).

Following the passage of Proposition 15, in June 2003, the governor signed HB 3588, amending the statute regarding regional mobility authorities and capitalizing the Texas Mobility Fund with transportation-related revenues that were previously supporting General Revenue. TxDOT describes House Bill 3588 as "the most significant transportation legislation in the history of Texas" (Texas Department of Transportation, 2003). The revenue from certain traffic fines, motor vehicle inspection fees, and driver's license fees will leverage up to $3 billion in bonds to accelerate construction of transportation projects. This legislation also increased the options for funding transportation improvements for regional mobility authorities and TxDOT. These options include the use of toll equity (through direct tolls on users and pass-through tolling guaranteed by the state) to secure bonds, lease of surplus land for commercial uses such as hotels, restaurants, stores and gas stations, conversion of nontoll highways to tolled facilities, and the ability to reinvest surplus toll revenues into the transportation system after a transportation facility's debt has been paid off (Texas State Legislature, 2003).

## Trans-Texas Corridor

In June of 2002, TxDOT unveiled what it calls "the largest engineering project in the state's history"—the Trans-Texas Corridor—4,000 miles of separated truck and passenger lanes, high-speed rail, freight rail, and commuter passenger rail, and a dedicated utility corridor up to 200 feet wide. At an estimated cost of $31.4 million per centerline mile, in addition to right-of-way and miscellaneous costs, the total cost for the Trans-Texas

Corridor could range between $145.2 billion to $183.5 billion (Texas Department of Transportation, 2002). With an annual budget of around $7 billion for the State Highway Fund ending in fiscal year 2005, it is unlikely that traditional transportation funding could finance the Trans-Texas Corridor. In fiscal year 2003, TxDOT spent almost every dollar of gas tax revenue on maintaining the system and the cost of maintenance has not been declining, but has been rising (Texas Department of Transportation, 2005).

As in other states, transportation revenue in Texas depends heavily on the gas excise tax, but is also heavily supported by federal funds. In 2005, approximately 30% of the Texas State Highway Fund came from the state gas excise tax and approximately 47% from federal funds. Another 12% came from vehicle registration fees (Texas Department of Transportation, 2006a). The declining role of the gas excise tax is acknowledged in several TxDOT documents, but no strong effort on the part of TxDOT has been made for increasing the gas excise tax to respond to demand for transportation improvements (Texas Department of Transportation, 2005). Instead, TxDOT and Texas state politicians are relying on the finance tools made available through the passage of Proposition 15 and HB 3588 to finance the construction of all or parts of the Trans-Texas Corridor, while continuing to maintain a growing network of roads and highways that will see increased usage as population and vehicle miles traveled continue to increase.

## Current Status

The future Texas transportation system will rely heavily on public-private partnerships centered on the use of direct tolling of road users. The TxDOT plan "demand(s) consumer-driven decisions that respond to traditional market forces" (Texas Department of Transportation, 2006b). It is too early to measure the success of this approach; however, in December 2004, the Texas Transportation Commission had already selected Cintra, an international engineering and construction firm, to develop a major component of the Trans-Texas Corridor resulting in a private investment of $7.2 billion in Texas highway infrastructure. The portion selected will be a 316-mile four-lane tolled highway between Dallas and San Antonio, part of a larger Oklahoma-to-Mexico portion of the Trans-Texas Corridor (Texas Department of Transportation, 2004a).

## WASHINGTON

In November of 2005, the voters of Washington defeated a ballot initiative that would have repealed a 9.5¢-per-gallon increase in the state's gas tax approved by the Legislature in May of that year. This case is unusual because it shows a departure from the defeat of statewide initiatives to increase the state gas tax in Oklahoma (2005), Missouri (2002), and earlier in Washington (2002) (National Conference of State Legislatures, 2006). While the three defeated measures asked voters to increase the state gas tax, the Washington measure in 2005 asked voters to repeal an existing gas tax approved by the Legislature. Thus, Washington is relying on increases in the gas tax and other transportation-related fees to increase transportation funding.

## Background

Washington experienced dramatic growth in population and road use over the past several decades. Between 1980 and 2000, Washington's population grew by 43%, or 6 million persons, vehicle registrations increased 57%, and vehicle miles traveled increased an estimated 88% (League of Women Voters of Seattle, 2005).

The Washington State Department of Transportation (WSDOT) prepared Washington's Transportation Plan 2003–2022 in February 2002, which identified transportation needs, and transportation funding gaps over the following twenty years (Washington State Department of Transportation 2002). Later that year, the Legislature passed a 9¢-per-gallon increase in the gas tax, subject to voter approval. The measure was soundly defeated (37.2% approval) (National Conference of State Legislatures, 2006). Following the measure's defeat, the Legislature approved a temporary 5¢ increase in the gas tax (without voter approval) in 2003 known as the Nickel Tax and an increase in the sales tax on automobile sales as an incremental fix to the funding dilemma. After the implementation of the Nickel Tax, the Washington gas tax stood at 28¢ per gallon, one of the highest rates in the nation (League of Women Voters of Seattle, 2005).

A public opinion survey of 1027 Washington households on state transportation and funding was conducted by Sage Projections in November 2004 for WSDOT (Sage Projections, 2004). At the 95% confidence level, the survey had a 1.9 point margin of error. The respondents were split with regard to the need to raise transportation funding; half believed that current revenues should be sufficient to fund all transportation projects and the other half did not. The respondents were asked to consider potential new revenue sources assuming there was a need to increase transportation revenues; the most preferred

source of funding was a redistribution of the state budget (61% support) while the least preferred source was an increase to the gas tax (31% support) or sales tax (24% support) (Sage Projections, 2004).

In 2005, the state legislature approved a phased increase in the gas tax as well as increases in weight fees, licenses and permits. Table 60 shows the projected 16-year proceeds from the various revenue increases. The gas tax, light truck license fee, and vehicle license plate fee are constitutionally dedicated to highway use (18th Amendment), while the remaining revenue sources are available for any transportation investment.

**Table 60 Projected 16-Year Proceeds (Dollars in Millions)**

| New Funding Restricted to Highway Use | | New Nonrestricted Transportation Funding | |
|---|---|---|---|
| Gas Tax Increase (9.5/gallon) Phased In Over Four Years | 5,546 | Passenger Car Weight Fee ($10–$30/year) Varies by Weight | 908 |
| Light Truck License Fee ($10–$30/year) Varies by Weight | 341 | Motor Home Fee ($75/year) | 130 |
| Vehicle License Plate Fee (one-time fees) | 227 | Various DMV Fees (varies) | 179 |
| Total | 6,114 | Total | 1,217 |

*Source*: Washington State Department of Transportation 2006.

## Initiative 912

In less than three months, a popular referendum of the voters of Washington qualified for the November 2005 ballot, with over 400,000 signatures gathered. Initiative 912 would repeal the phased 9.5¢-per-gallon gas tax increase, but would not repeal other transportation funding mechanisms passed in the 2005 legislative session. A Yes vote on Initiative 912 would repeal the phased 9.5¢-per-gallon gas tax increase while a No vote would allow the phased gas tax increase to proceed as planned (Washington State Secretary of State, 2005a).

Proponents of the measure, including the Libertarian and Republican political parties and the Washington State Farm Bureau, argued that the gas tax increase would make gasoline beyond the affordability of many Washington State residents and pointed to the failed legislative referendum to raise the gas tax three years prior. Proponents argued that the state's gas tax is already the eighth highest in the nation and still has not reduced congestion or adequately maintained roads. They argue for greater oversight and prioritization of current funds for the most effective projects. Proponents claimed that the

tax package would not cover the full cost of many of the projects identified by WSDOT as benefiting from the increased tax revenue. They also argued that while the WSDOT has identified 274 projects to benefit from the gas tax, the WSDOT has no legal obligation to move forward with any or all of the projects (League of Women Voters of Seattle, 2005). Nothing prevents spending more of the gas tax on a new viaduct for Seattle and starving the rest of the state, according to proponents (Cornfield, 2005).

Opponents of the measure argued that supporting the measure would result in drastic cuts to priority projects in the state, including several bridges, resulting in a major risk to the economy should another major earthquake hit the region. They pointed to the 274 projects that would be partially or fully funded by the tax package as incentive to supporting the tax. Opponents also argued that the typical driver would pay only $52 dollars extra per year as a result of the tax package in 2008 (the last year of the phased increases in the gas tax)—a small price to pay to keep the state's transportation system from falling into disrepair as a result of the decreased purchasing power of the gas tax. Economic development was a strong message throughout opponents' arguments. Opponents of the measure included a broad alliance of unions, environmental groups, developers, business groups and the Democratic Party (League of Women Voters of Seattle, 2005). Significant contributions to the No on I-912 Measure were made by Microsoft Corp. Chairman Bill Gates, Boeing Co., and Weyerhaeuser Co. (Reuters News Service, 2005).

A public opinion survey conducted by a news agency approximately three weeks prior to the election showed a close race with 52% of likely voters saying they would repeal the tax, with 41% supportive of the tax, and 7% undecided. The same poll found that 52% of likely voters do not believe that the state is spending enough money on transportation and 68% of likely voters do not feel that projects funded by the gas tax are fairly distributed between the Puget Sound area and the rest of the state (Mak, 2005). The results of the election show that almost all counties along Puget Sound were supportive of the tax while the opposite is true of the eastern and less urban counties (Washington State Secretary of State, 2005b).

The measure ultimately failed 52% to 48%. Opponents of the measure outspent proponents by as much as 5 to 1 ($3 million to $600,000, respectively), according to the Public Disclosure Commission (Public Disclosure Commission, 2006). Additionally, free publicity for the measure's opponents came with a rock slide forcing the closure of I-90 through the Snoqualmie Pass two days prior to the election. A proposed diversion of I-90 near Snoqualmie Pass away from a hillside responsible for as much as 80% of winter closures was included in the list of projects expected to receive funding from the gas tax

increase. News reports of frustrated drivers delayed by the rockslide combined with the prospect of a solution at hand may have influenced some voters to vote against I-912 (Cornwall and Gilmore, 2005).

## CONCLUSION

Clearly, public opinion regarding the use of a gas tax increase to supplement existing transportation funds changed between the survey in November 2004 and the referendum one year later. According to ABC News and the *Olympian* newspaper, reasons for the failure of the measure include the voting power of urban counties, a broad alliance of various interest groups (particularly those in the business and development communities), failure of the proponents of the measure to provide an alternate plan for easing transportation congestion and promoting economic development, the success of WSDOT in efficiently and effectively using the Nickel Tax over the prior two years, a clear set of prioritized transportation improvement projects, and potentially the failure of public infrastructure in the southern states after Hurricane Katrina (Olympian, 2005; Reuters News Service, 2005).

# APPENDIX J:
# SURVEY 1 INSTRUMENT

## CALIFORNIA TRANSPORTATION FUNDING SURVEY, JANUARY 2006

**INTRO:** Good (afternoon/evening). I'm _____ from California State University at San José calling on a survey of adults about important issues facing your area and a variety of possible solutions. This is not a sales call and your responses are completely confidential. May we have about ten minutes of your time to include your views in this important survey?

**1** Proceed to next screen
**2** Call back later
**3** Spanish language callback
**4** No answer
**5** Answering machine
**6** Busy
**7** Disconnected number
**8** Refusal
**9** Business/fax/modem
**10** Language barrier
**11** Never call

**INTRO2:** Great. This survey is completely voluntary and poses no risk to you in any way. If we come to a question you don't want to answer, just tell me and we'll move on.

**QA1:** To make our survey as representative as possible, may I please speak to the youngest male 18 or older who is at home right now?
*[IF NO MALE AVAILABLE]* Then may I please speak to the oldest female 18 or older who is at home right now?

**1** Person on phone is youngest male or oldest female at home *[SKIP TO Q1]*
**2** A different person is youngest male or oldest female (available)
**3** Call back later *[CALLBACK]*
**9** Refused *[TERMINATE]*

**QA1X:** *[TO NEW PERSON]* Good (afternoon/evening). I'm _____ from California State University at San José calling on a survey of adults about important issues facing your area and a variety of possible solutions. This is not a sales call and your responses are completely confidential. May we have a few minutes of your time to include your views?

**1** Yes
**2** No *[TERMINATE]*
**3** Call back later *[CALLBACK]*
**9** Refused *[TERMINATE]*

**INTRO2X:** Great. This survey is completely voluntary and poses no risk to you in any way. If we come to a question you don't want to answer, just tell me and we'll move on.

**Q1:** OK. To begin with, do you think things in California are generally going in the right direction or are they seriously off on the wrong track?

**1** Right direction
**2** Wrong track
**8** Don't know

**Q2:** How about in your region? Are things generally headed in the right direction or are they seriously off on the wrong track?

**1** Right direction
**2** Wrong track
**8** Don't know

**Q3:** Thinking about the state as a whole, what in your opinion is the most important issue facing people in California today?*[code but do not read responses]*

**1** Economy, jobs, unemployment
**2** Education, schools, teachers
**3** Immigration, illegal immigration
**4** Crime, gangs, drugs
**5** Gasoline prices
**6** Health care, health costs, HMO reform
**7** State budget, deficit, taxes
**8** Traffic, transportation, mass transit
**9** Housing costs, housing availability
**10** Electricity costs, supply/energy crisis
**11** Environment, pollution
**12** Other *(specify at Q3a)*
**13** Don't know

**Q3a:** Other issue _____

**Q4:** Compared to other issues that may affect you, how much of a problem is the quality of the transportation system for you personally? Would you say it's a big problem, somewhat of a problem, not much or a problem or no problem at all?

**1** Big problem
**2** Somewhat of a problem
**3** Not much of a problem
**4** No problem at all
**8** Don't know

**Q5:** Would you say the level of state and local taxes you pay is too high, too low or just about right?

**1** Too high
**2** Too low
**3** About right
**8** Don't know

**Q6:** Given that state and local governments in California have to divide their budgets among many competing needs, would you say that government spends too much, too little or about the right amount on transportation?

**1** Too much
**2** Too little
**3** About the right amount
**8** Don't know

**Q7X:** Thinking about your own personal preferences for government investment in transportation, please tell me whether you'd like to see each of the following be a high priority, medium priority or low priority.

**Rotate Q7-11**

**Q7:** Expanding and improving freeways and highways
**Q8:** Maintaining local streets, including filling potholes
**Q9:** Expanding and improving train, but, and light rail service
**Q10:** Making it safer and easier to bike and walk
**Q11:** Reducing traffic congestion on freeways and highways

**1** High priority
**2** Medium priority
**3** Low priority
**8** Don't know

**Q12:** As a general principle, do you think the amount people pay in taxes and fees used to pay for transportation projects should take into account much they drive on California roads and highways? In other words, should people who drive more pay more in taxes and fees? Or should taxes and fees used to pay for transportation projects be pretty much the same for everyone, regardless of how much they drive?

**1** Take into account how much people drive
**2** Taxes and fees should be the same for everyone
**8** Don't know

**Q13:** Generally speaking, should the fees that people pay to register their vehicles take into account the gasoline mileage those vehicles achieve? That is, should the fees be lower for vehicles that get more miles per gallon, and higher for vehicles that get fewer miles per gallon?

**1** Yes, it should take into account fuel efficiency
**2** No, it should not take into account fuel efficiency
**8** Don't know

**Q14:** As a general principle, should the fees that people pay to register their vehicles take into account the amount of pollution those vehicles emit? That is, should the fees be lower for vehicles that emit less air pollution, and higher for vehicles that emit more air pollution?

**1** Yes, fees should take into account air pollution emissions
**2** No, fees should not take into account air pollution emissions
**8** Don't know

**Q15:** Generally speaking, do you think government funds spent on transportation should focus more on improving and expanding the system of roads and highways we have? Or do you think government funds should focus more on improving and expanding mass transit like trains, light rail and buses?

**1** Focus on roads and highways
**2** Focus on mass transit
**3** Both
**4** Neither
**8** Don't know

**Q16X:** State officials are considering a variety of different ways to raise funding for maintaining and improving highways, mass transit, and local streets. I'd like to ask your thoughts about some of these. In each case, assume that the state would be allowed to spend the revenue only for transportation purposes, such as maintaining and improving LOCAL streets, highways, and mass transit. Please think about each proposal on its own, with the idea that only one would be enacted.

**ROTATE Q16-Q20** *(KEEP BLOCKS TOGETHER)*

**Q16:** One idea (another idea) is to increase the 18-cents-a-gallon state gas tax by one cent per year for ten years. Would you vote for or against such a measure?

**1** For
**2** Against
**8** Don't know

**Q16a:** Another idea is to index the gas tax to inflation. Under this proposal, the gas tax could increase slightly each year based upon inflation. For example, in 2004, inflation in California was about 3%, so the tax would have gone up by about a half cent per gallon. (note: 3% x 0.18) Would you vote for or against a proposal to index the gas tax to inflation?

**1** For
**2** Against
**8** Don't know

**Q17:** One idea (another idea) is to eliminate the 18-cents-a-gallon gas tax altogether and replace it with a so-called "mileage fee" based on the number of miles a vehicle is driven. Each driver would pay a fee of one cent per mile for every mile driven within the state. For example, every 100 miles driven would incur a mileage fee of $1. Each vehicle would be equipped with an electronic means to keep track of miles driven and the fee would be paid at the pump when drivers buy gas.

**1** For
**2** Against
**8** Don't know

**Q18:** One idea (another idea) is to increase the vehicle REGISTRATION fee to $62 per year per vehicle, from its current level of $31. Would you support or oppose that proposal?

**1** Support
**2** Oppose
**8** Don't know

**Q18a:** Another option is to increase the vehicle registration fee to an AVERAGE of $62 per year for all vehicle owners, but vary the fee according to how much pollution the vehicle emits and how much gas mileage it gets. Vehicles that emit more pollution or get lower gas mileage would pay HIGHER fees and those that emit less pollution or get better gas mileage would pay LOWER fees. Would you support or oppose that proposal?

**1** Support
**2** Oppose
**8** Don't know

**Q19:** One idea (another idea) is to raise the vehicle LICENSE fee to 1%. The vehicle license fee is currently 0.65% (point six-five percent) of your vehicle's value, so the new fee would be 1%, with the additional revenue dedicated to transportation purposes. Would you vote for or against such a proposal?

**1** For
**2** Against
**8** Don't know

**Q20:** One idea (another idea) is to adopt a half-cent increase in the statewide *(if asked: not county)* sales tax. Would you support or oppose a half-cent increase in the statewide sales tax for transportation projects?

**1** Support
**2** Oppose
**8** Don't know

**Q21:** Now, suppose state officials are thinking about raising an additional $1 billion a year in funding for transportation. I'm going to read you a list of five different tax and fee options that would all raise that same $1 billion. Please tell me the one you like best.
*READ 1-5 ONLY (re-read list if respondent needs help)*

**1** Raising the statewide sales tax by a quarter of a cent
**2** Raising the registration fee for personal vehicles by $50 a year
**3** Adding a new mileage fee of a third of a cent per mile driven
**4** Raising the gas tax by 6 cents a gallon
**5** Raising the vehicle license fee to 1 percent
**6** None of them
**8** Don't know

**Q22:** One way to pay for new highway lanes is to charge tolls for using them. Do you support or oppose the idea of collecting tolls from drivers using NEW highway lanes?

**1** Support
**2** Oppose
**8** Don't know

**Q23:** Another idea is to open underused carpool lanes to solo drivers who are willing to pay a toll, and to use the money collected to improve transportation. Do you support or oppose that idea?

**1** Support
**2** Oppose
**8** Don't know

**Q24:** One proposal is for the state to pay for new freeways and transit programs with general obligation bonds. These don't require a tax increase. But paying off the bonds from the state's general fund over 30 years would use money that otherwise might be spent for other state programs and services. Would you vote for or against that kind of transportation bond?

**1** For
**2** Against
**3** Maybe/depends
**8** Don't know

**Q25:** If any measures to raise funds for transportation appear on the ballot, what percentage of the vote should be required for their approval? 50%, like most issues; 55%, like education bonds, or 67%, like local sales taxes?

**1** 50%
**2** 55%
**3** 67%
**4** Other
**8** Don't know

**Q26:** Do you approve or disapprove of the job Caltrans is doing managing the state's transportation system?

**1** Approve
**2** Disapprove
**8** Don't know

**Q27:** Gender *[BY OBSERVATION]*

**1** Male
**2** Female

**Q28:** What race or ethnicity do you consider yourself?

**1** White, Caucasian, European
**2** Hispanic, Latino, Mexican-American
**3** Asian, Pacific-Islander, East Indian
**4** Black, African-American
**5** Other (including Native American) *[Specify at Q28a]*
**9** Refused

**Q23a:** What race or ethnicity do you consider yourself?

**Response:** _____

**Q29:** In what YEAR were you born? *[IF RESPONDENT REFUSES TO ANSWER, ENTER 999]*

**Record year:** _____

**Q30:** Is the place where you currently live a single family detached home, an attached home such as a condo or townhouse, an apartment, or a mobile home?

**1** Single family detached
**2** Attached condominium or townhouse
**3** Apartment
**4** Mobile home
**9** Refused

**Q31:** What is your education level?

**1** Less than high school level
**2** High school graduate
**3** Some college
**4** College graduate
**5** Some graduate school
**6** Graduate degree
**9** Refused

**Q32:** When you want to go somewhere, how often do you have a car available so that you can drive yourself?

**1** Always
**2** Most of the time
**3** Occasionally
**4** Never
**5** N/A (I don't drive)

**Q33:** In a typical week, how many miles do you drive?

**Response:** _____

**Q34:** In the last month, have you taken any form of public transit like a bus, light rail, or a train?

**1** Yes
**2** No
**8** Don't know

**Q35:** As you know, many people are so busy these days they can't find time to register to vote, or they move around so often they don't get a chance to re-register. Are you now registered to vote in your precinct, or haven't you been able to register for one reason or another?

**1** Yes, registered
**2** No, not registered
**8** Don't know/refused

**Q36:** In what party are you registered to vote?
*(If respondent says "independent" ask:*
Do you mean you're registered in the American Independent Party or do you mean you're registered but you declined to state a party?)

**1** Democrat
**2** Republican
**3** Independent (i.e., Decline to state)
**4** Libertarian
**5** Peace & Freedom
**6** Green
**7** Other (including American Independent)
**8** Don't know/refused

**Q37:** Although political labels are never precise, would you say that politically you are very conservative, conservative, moderate, liberal or very liberal?

**1** Very conservative
**2** Conservative
**3** Moderate
**4** Liberal
**5** Very liberal
**8** Don't know/refused

**Q38:** How often would you say you vote: all of the time, most of the time, some of the time, seldom, or never?

**1** All of the time
**2** Most of the time
**3** Some of the time
**4** Seldom
**5** Never
**8** Don't know/refused

**Q39:** Would you be willing to be contacted later by a researcher or reporter for a follow-up interview? *IF Q39=2, SKIP NAME*

**1** Yes
**2** No

**Q40:** Finally, and of course confidentially, please stop me when I mention a range that describes your household income. *(READ RANGES)*

**1** Less than $25,000
**2** More than $25,000 but less than $50,000
**3** More than $50,000 but less than $75,000
**4** More than $75,000 but less than $100,000
**5** More than $100,000 but less than $125,000
**6** More than $125,000
**9** Refused

**NAME:** Since you said you wouldn't mind being called back by a researcher or reporter, who should we ask for, if we should call back? *(Accept first/last/both names)*
*(TYPE 99 if respondent does not wish to give a name)*

_____

**LANG:** *(FOR INTERVIEWER ONLY! DO NOT READ ALOUD.)*
In which language did you conduct this survey?

**1** English
**2** Spanish
**3** Other *(Note record # and language and give to supervisor.)*

_____

**THANK:** Thank you for your time and your participation. Would you like the name and phone number of people you may call with questions or concerns about this survey?

(*IF YES*) Please feel free to call:
Philip Trounstine [*TROWN-steen*],
Director of the Survey and Policy Research Institute
at San José State University at 924-6993,
or Pamela Stacks,
Associate Vice President of Graduate Studies & Research at 924-2427.

# APPENDIX K:
# SURVEY 2 INSTRUMENT

## CALIFORNIA TRANSPORTATION FUNDING SURVEY, MARCH 2006

**INTRO:** Good (afternoon/evening). I'm _____ from San José State University calling on a survey of adults about ways California can pay for new highways. This is not a sales call and your responses are completely confidential. May we have about 5 minutes of your time to include your views in this important survey?

| | | | |
|---|---|---|---|
| **1** | Proceed to next screen | **7** | Disconnected number |
| **2** | Call back later | **8** | Refusal |
| **3** | Spanish language callback | **9** | Business/fax/modem |
| **4** | No answer | **10** | Language barrier |
| **5** | Answering machine | **11** | Never call |
| **6** | Busy | | |

**INTRO2:** Great. This survey is completely voluntary and poses no risk to you in any way. If we come to a question you don't want to answer, just tell me and we'll move on.

**QA1:** To make our survey as representative as possible, may I please speak to the youngest male 18 or older who is at home right now?
*[IF NO MALE AVAILABLE]* Then may I please speak to the oldest female 18 or older who is at home right now?

| | | |
|---|---|---|
| **1** | Person on phone is youngest male or oldest female at home | *[SKIP TO Q1]* |
| **2** | A different person is youngest male or oldest female (available) | |
| **3** | Call back later | *[CALLBACK]* |
| **9** | Refused | *[TERMINATE]* |

**QA1X:** *[TO NEW PERSON]* Good (afternoon/evening). I'm _____ from San José State University calling on a survey of adults about ways California can pay for new highways. This is not a sales call and your responses are completely confidential. May we have about 5 minutes of your time to include your views in this important survey?

| | | |
|---|---|---|
| **1** | Yes | |
| **2** | No | *[TERMINATE]* |
| **3** | Call back later | *[CALLBACK]* |
| **9** | Refused | *[TERMINATE]* |

**INTRO2X:** Great. This survey is completely voluntary and poses no risk to you in any way. If we come to a question you don't want to answer, just tell me and we'll move on.

**Q1:** OK. To begin with, do you think things in California are generally going in the right direction or are they seriously off on the wrong track?

**1** Right direction
**2** Wrong track
**8** Don't know

**Q2:** Compared to other issues that may affect you, how much of a problem is the quality of the transportation system for you personally? Would you say it's a big problem, somewhat of a problem, not much or a problem or no problem at all?

**1** Big problem
**2** Somewhat of a problem
**3** Not much of a problem
**4** No problem at all
**8** Don't know

**Q3X:** Now, state officials are interested in finding ways to maintain our highways and build new ones without raising taxes or fees. I'm going to describe a few ways that could be done, and ask your thoughts about them.

**Q3:** One option for building new highway projects without increasing taxes is to borrow money to build the road, charge tolls for driving on the new highway, and use the money collected to pay back the loans and maintain the highway. Do you generally support or oppose building new toll roads?
*PROBE:* Would you say your support (or opposition) is moderate or strong?

**1** Strong support
**2** Moderate support
**3** Moderate opposition
**4** Strong opposition
**8** Don't know

**Q4:** If state officials said a needed highway would be built many years sooner as a toll road than as a regular freeway, would that make you more or less likely to support building the highway as a toll road?

**1** More likely
**2** Less likely
**3** No difference *[Accept but do not offer]*
**8** Don't know

**Q5:** If state officials said the tolls charged for using the highway would be eliminated once the highway was paid for, would that make you more or less likely to support building the highway as a toll road?

**1** More likely
**2** Less likely
**3** No difference *[Accept but do not offer]*
**8** Don't know

**Q6:** What if the tolls charged for using the highway weren't eliminated, but were also used to pay for other needed transportation improvements in the same region? Would that make you more likely or less likely to support building the highway as a toll road?

**1** More likely
**2** Less likely
**3** No difference *[Accept but do not offer]*
**8** Don't know

**Q7:** Another option is building new freeway lanes alongside existing highways and charging a toll to drivers who use those NEW lanes? Do you support or oppose that idea?

**1** Support
**2** Oppose
**8** Don't know

**Q8:** There are proposals in some congested regions to build new toll lanes for trucks right next to existing freeways. Trucks would be required to use these toll lanes instead of the regular freeway. Would you support or oppose toll lanes for trucks?

**1** Support
**2** Oppose
**8** Don't know

**Q9:** There are two ways to build toll roads: One is to have THE STATE borrow the money to build the road and then use the tolls to pay back the debt. Another way is to let a PRIVATE COMPANY build and maintain the road and use the tolls to pay off its investment and earn a profit. If a new toll road IS going to be built, which would you prefer? To have the state build and operate it or to have a private company build and operate it?

**1** The state
**2** Private company *[SKIP TO Q12]*
**3** Neither *[Accept but do not offer]* *[SKIP TO Q11]*
**8** Don't know *[SKIP TO Q11]*

**Q10:** Does that mean you OPPOSE having new toll roads built and operated by private companies or just that you would PREFER to have the state build and operate any new toll roads?

**1** I oppose private companies building toll roads
**2** I prefer to have the state do it
**8** Don't know

**Q11:** Would you support allowing private companies to build and operate toll roads if state officials said the tolls charged by those private companies and their profits would be limited by the state?

**1** Yes
**2** No
**3** Maybe *[Accept but do not offer]*
**4** I'm just opposed to toll roads *[Accept but do not offer]*
**8** Don't know

**Q12:** Currently, the state highway department—Caltrans—manages the rest-stop areas along the highways. One idea for improving rest stops and raising funds for highway programs is to let Caltrans rent some rest-stop areas to private companies. Those companies would maintain the free restrooms and parking, and in exchange they could build and operate convenience stores, gas stations or restaurants in those rest areas. Would you support or oppose that idea?

**1** Support
**2** Oppose
**8** Don't know

**Q27:** Gender *[BY OBSERVATION]*

**1** Male
**2** Female

**Q28:** What race or ethnicity do you consider yourself?

**1** White, Caucasian, European
**2** Hispanic, Latino, Mexican-American
**3** Asian, Pacific-Islander, East Indian
**4** Black, African-American
**5** Other (including Native American) *[Specify at Q28a]*
**9** Refused

**Q23a:** What race or ethnicity do you consider yourself?

**Response:** _____

**Q29:** In what YEAR were you born?

**Record year:** _____ *{refused=999)*

**Q31:** What is your education level?

**1** Less than high school level
**2** High school graduate
**3** Some college
**4** College graduate
**5** Some graduate school
**6** Graduate degree
**9** Refused

**Q33:** In a typical week, how many miles do you drive?

**Response:** _____ *{refused=999)*

**Q34:** In the last month, have you taken any form of public transit like a bus, light rail, or a train?

**1** Yes
**2** No
**8** Don't know

**Q35:** As you know, many people are so busy these days they can't find time to register to vote, or they move around so often they don't get a chance to re-register. Are you now registered to vote in your precinct, or haven't you been able to register for one reason or another?

**1** Yes, registered
**2** No, not registered
**8** Don't know/refused

**Q36:** In what party are you registered to vote? *(If respondent says "independent" ask:* Do you mean you're registered in the American Independent Party or do you mean you're registered but you declined to state a party?)

**1** Democrat
**2** Republican
**3** Independent (i.e., Decline to state)
**4** Libertarian
**5** Peace & Freedom
**6** Green
**7** Other (including American Independent)
**8** Don't know/refused

**Q38:** How often would you say you vote: all of the time, most of the time, some of the time, seldom, or never?

**1** All of the time
**2** Most of the time
**3** Some of the time
**4** Seldom
**5** Never
**8** Don't know/refused

**Q39:** Would you be willing to be contacted later by a researcher or reporter for a follow-up interview?

**1** Yes
**2** No

**Q40:** Finally, and of course confidentially, please stop me when I mention a range that describes your household income. *(READ RANGES)*

**1** Less than $25,000
**2** More than $25,000 but less than $50,000
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**5** More than $100,000 but less than $125,000
**6** More than $125,000
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**LANG:** *(FOR INTERVIEWER ONLY! DO NOT READ ALOUD.)*
In which language did you conduct this survey?

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**2** Spanish
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_____

**NAME:** Since you said you wouldn't mind being called back by a researcher or reporter, who should we ask for, if we should call back? *(Accept first/last/both names; enter 99 if respondent does not wish to give a name)*

**Name:** _____

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*[IF YES]* Please feel free to call:
Philip Trounstine *[TROWN-steen],*
Director of the Survey and Policy Research Institute
at San José State University at 924-6993,
or Pamela Stacks, Associate Vice President of Graduate Studies & Research at 924-2427.

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| AQMD | Air Quality Management District |
| AVASA | Abandoned Vehicle Abatement Service Authority |
| BART | Bay Area Rapid Transit |
| CARB | California Air Resources Board |
| CHP | California Highway Patrol |
| CPI | Consumer Price Index |
| DMV | Department of Motor Vehicles |
| EPA | Environmental Protection Agency |
| ETC | Electronic Toll Collection |
| GO | General Obligation (Bonds) |
| GPS | Global Positioning System |
| HOT Lanes | High-Occupancy/Toll Lanes |
| HOV | High-Occupancy Vehicle Lane |
| HTF | Highway Trust Fund |
| LCV | Longer Combination Vehicle |
| LTF | Local Transportation Fund |
| NCSL | National Conference on State Legislatures |
| PPIC | Public Policy Institute of California |
| PPP | Public-Private Partnership |
| PTA | Public Transportation Account |
| RUFTF | Road User Fee Task Force (Oregon) |
| SAFE | Service Authority for Freeway Emergencies |
| SAFETEA-LU | Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users |
| SHA | State Highway Account |
| SPRI | Survey and Policy Research Institute |
| TOT | Truck-Only Tolls |
| TxDOT | Texas Department of Transportation |
| WSDOT | Washington State Department of Transportation |
| VIN | Vehicle Identification Number |
| VLF | Vehicle License Fee |
| VMT | Vehicle Miles Traveled |

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# PUBLICATION PEER REVIEW

San José State University, of the California State University system, and the MTI Board of Trustees have agreed upon a peer view process to ensure that the results presented are based upon a professionally acceptable research protocol.

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